

UPPER COOK INLET SALMON ESCAPEMENT STUDIES, 1994

by

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and

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ABSTRACT

Sockeye salmon *Oncorhynchus nerka* spawning escapements into four river systems of Upper Cook Inlet, Alaska, were estimated using side-scanning sonar equipment. Sockeye salmon escapement estimates were 1,003,446 into the Kenai River, 205,117 into the Kasilof River, 30,355 into the Crescent River, and 128,032 into the Yentna River. Indices of escapements of other salmon species into the Yentna River were also obtained by using sonar: 79,178 pink *O. gorbuscha*, 18,971 chum *O. keta*, and 25,173 coho *O. kitsutch* salmon. Age composition of sockeye salmon in the Kenai River was primarily distributed within three age classes: 1.3 (61.1%), 2.2 (17.8%) and 2.3 (12.1%). Age composition was distributed within four age classes in the Kasilof River: 2.2 (28.6%); 1.3 (28.3%); 1.2 (26.0%) and 2.3 (17.2%). Age-1.3 was the most abundant (49.6%) sockeye salmon age class in the Crescent River, followed by age-2.3 (30.5%). Age composition of sockeye salmon in the Yentna River was primarily distributed within three age classes: 1.3 (43.2%), 1.2 (23.2%), and 2.3 (17.6%). Length and sex data were collected for sockeye salmon in each river. Sockeye salmon migration routes in all rivers were near shore. Peak salmon counts were recorded during the evening hours in the Kenai and Kasilof Rivers, and during the evening and early morning hours in the Yentna River. Peak hourly counts in the Crescent River were related to the post meridiem high tides.

KEY WORDS: Pacific salmon, sockeye salmon, *Oncorhynchus nerka*, Upper Cook Inlet, Kenai River, Kasilof River, Crescent River, Yentna River, Susitna River, spawning escapements, hydroacoustic enumeration, biological sampling, migratory behavior.

INTRODUCTION

Prior to 1968, sockeye salmon escapement estimates in Upper Cook Inlet (UCI), Alaska (Figure 1) were based on surveys of clear water spawning areas and provided no information about the distribution or number of sockeye salmon which spawned in glacially occluded waters (King and Davis 1989). Commercial and recreational fishery management efforts were further hampered by lack of daily and cumulative estimates of escapement. These constraints were significantly reduced by the development of hydroacoustic techniques to enumerate sockeye salmon in some glacial tributaries of UCI. Hydroacoustic enumeration of escapement began on the Kenai and Kasilof Rivers in 1968, was expanded to the Susitna River in 1978 and to the Crescent River in 1980. The Susitna River counting site was abandoned in 1985, and in 1986 counting operations began on the Yentna River, a major tributary of the Susitna River. Results of escapement enumeration studies were documented by Waltemyer et al. (1980), Tarbox et al. (1983), King and Tarbox (1984, 1986, 1987, 1988, 1989a, 1990 and 1991), King et al. (1989B), King (1990), King et al. (1992), King and Davis (1992), Davis et al. (1993), Davis and King (1993 and 1994) and Davis et al. (1993).

The program objectives of UCI escapement projects in 1994 were to estimate (1) the daily and cumulative number of sockeye salmon entering the Kenai, Kasilof, Crescent, and Yentna Rivers, and (2) the age, length, and sex composition of those escapements. Indices of abundance were also obtained for Yentna River pink, chum and coho salmon.

METHODS

Bendix Corporation¹ side-scanning sonar counters described by King and Tarbox (1989a), Gaudet (1983) and Bendix Corp (1980 and 1984) were used to enumerate salmon escapements. Pulse width was 100 μ s and the frequency was 515 KHz. Two- and four-degree transducer elements were multiplexed in an alternating mode. The counting threshold was preset at approximately -38 db by the manufacturer. The detection threshold could be lowered by increasing gain to the system. Counters were operated without artificial substrates in the Kenai and Crescent Rivers and on the south bank of the Yentna River. A technical consultant tested the counters for proper operation prior to deployment, and reinspected counters when migrating fish densities neared maximum levels in each river system (A. Menin, Hydroacoustic Consulting, Sylmar, CA).

Project operational dates were: 2 July through 24 August on the Kenai River; 12 June through 11 August on the Kasilof River; 7 July through 12 August on the Yentna River; and 28 June through 8 August on the Crescent River. Counting operations ceased when daily

¹Use of a company's name does not constitute product endorsement.

counts were less than 1% of the cumulative count for 3 consecutive days following the cessation of commercial fishing.

Raw hourly output data were edited to account for debris, bottom echoes, or other sources of non-fish counts. At the Kenai, Kasilof, and Yentna River counting sites, hourly sonar counts for each range increment (sector) were entered into a data processing program daily. This program calculated a daily average hourly count for inshore (1-6) and offshore (7-12) sectors by

$$C_a = C_b / N, \quad (1)$$

where:

C_a = average count per sector per hour;

C_b = valid hourly counts for all inshore or offshore sectors; and

N = number of sector per hour units which contained only valid counts.

The program also substituted the average count into any sector/hour block where counts were deleted through editing.

Analysis of sonar counts collected from the north bank of the Crescent River was similar but calculations were made manually and computer entry of data occurred post-season. The daily average hourly count for the south bank of the Crescent River was calculated for each sector by:

$$C_c = C_d / N, \quad (2)$$

where:

C_c = average count per sector per hour for the Crescent River south bank;

C_d = valid Crescent River south bank hourly counts per sector; and

N = number of hour units per sector which contained only valid counts.

The computer program used to apportion sonar counts to species provides for input for five species of fish. In order to include Dolly Varden char in the apportionment process at Crescent River, we had to excluded what we considered to be an insignificant number of chinook salmon (8 chinook salmon were captured in the fish wheel).

Temporal and spacial behavior of sockeye salmon was assessed by examining distribution of fish by sector, hourly passage rate, bank preference (Appendix A.1-A.40), and cumulative proportion of sonar counts by day. Transducer distances from shore varied at each site and changed as water levels fluctuated. Fish distribution information is reported for the period when 80% (10%-90%) of the migration passed the counting sites. The maximum counting distance employed was used for calculating proportions of targets by range. Counting ranges for counters operated at Crescent River were 3.7 m to 6.1 m for the north bank and 15.7 m to 17.1 m for the south bank. Counting range for the north bank of the Kenai River was 10.7 m to 18.3 m and 5.2 m to 7.6 m for the south bank. An extended weir was erected on

the north bank of the Kenai River to position the transducer further from the bank (6.7 m). The increased distance from the bank of the north bank transducer, combined with a counting distance up to 25.3 m allowed monitoring up to 32 m of the river's substrate during the period 2-25 July. As discharge increased, the transducer was moved to the position used in previous years (approximately 3 m from the bank). Counting ranges at the Kasilof River were 11.9 m to 12.5 m on the north bank and 13.4 m to 13.7 m on the south bank. In the Yentna River, counting distance for the north bank was 12.4 m. Counting range for the south bank was 4.6 m to 5.8 m.

Transducers were oriented manually except at Crescent River, the north bank of the Kenai River, and the south bank of the Yentna River, where remotely controlled rotators were used. Correct orientation of the acoustic axis was tested periodically by using an artificial target. An air-filled plastic sphere was weighted and moved through the ensonified area at various distances from the transducer. Simultaneous detection of the target by the counter and visual recognition on an oscilloscope verified correct axis orientation.

Counters were monitored from 07-2400 h on the Kasilof, Crescent and Yentna Rivers, and throughout the 24 h period on the Kenai River. Visual counts from an oscilloscope were compared to the counts accumulated by the counter during a minimum 10-min period or for a minimum oscilloscope count of 100 fish. During periods of low density (passage < 500 fish per hour), Kenai and Yentna River oscilloscope/counter observations were made at a minimum of 1 h per bank each day. When passage rates reached 500 fish per hour, minimum observation time increased to 2 h per bank per day. Kasilof and Crescent River counters were monitored for a minimum of 2 h per bank per day.

Counter adjustments were made if a relative error greater than 20% occurred between targets counted on the oscilloscope and targets recorded by the counter. However, operators typically made adjustments to the counters to accommodate for less than 20% relative error. The basic counter adjustment consisted of changing the pulse repetition rate.

Information used to estimate species composition of sonar counts, and age, length, and sex of sockeye salmon was obtained from salmon captured in fish wheels. Fish wheels were located on the north bank of the Kenai and Kasilof Rivers (1 at each site), the south bank of the Crescent River (1), and on both banks of the Yentna River. A fish wheel was installed on the south bank of the Kenai River on 13 August. Fish wheels were operated up to 24 h per day at Yentna and Crescent Rivers. The Kasilof River fish wheel operation time depended upon catch efficiency and ranged from 4.5 to 32.3 h per sample period. The Kenai River north bank fish wheel was typically operated during evening and early morning hours when high passage rates and proximity to shore made migrating sockeye salmon most susceptible to capture. The fishwheel was stopped after the minimum sample size was reached.

Fish wheel catches at the Yentna River site were expanded for each 24 h period based on the hourly catch rate during the hours of operation by

$$F_d = (F_h / H) 24, \quad (3)$$

where:

F_d = expanded fish wheel catch for 24 hours;
 F_h = fish wheel catch for hours operated; and
 H = hours fish wheel operated.

Actual (not adjusted to 24 h) fish wheel catches were used to apportion Crescent and Kenai River sonar counts. With the exception of the Kasilof River where all counts are treated as sockeye salmon, daily fish wheel catches were grouped into sample sizes of at least 150 salmon to apportion sonar counts. Because of their size and number, Dolly Varden char were included in sonar count apportionment at Crescent River. Dolly Varden char were marked and released to verify that fish passing the sonar counters were migratory.

Weirs operated on Bear Creek by Cook Inlet Aquaculture Association and on Nikolai and Glacier Flat Creeks by the U.S. Biological Service provided escapement counts for these Tustumena Lake (Kasilof River) streams.

Factors influencing the accuracy of escapement estimates for coho, chum, and chinook salmon in the Yentna River were discussed by Tarbox et al. (1981, 1983). Counts apportioned to these species in 1994 were considered to be index counts.

Sockeye salmon scale samples were collected daily from the Kenai, Kasilof, Crescent, and Yentna Rivers. The number of salmon sampled per day for age composition was based on a percentage of the previous day's escapement count. These percentages were calculated by dividing the total season sample size by the anticipated total escapement. Sockeye salmon age composition sample sizes were based on methods for estimating multinomial proportions developed by Thompson (1987). Minimum sample size was calculated so that the estimated proportion of each major age class was within 5% of the true proportion 90% of the time. Previous years age composition summaries were analyzed to determine minimum sample sizes for a variety of age class ratios. The largest minimum sample size calculated in this manner was chosen as a minimum sample size for 1994. The minimum sample size was increased by 10% to account for unreadable scales, and this number was used as the total sample size required.

Sockeye salmon age class samples were divided into weekly periods and tested using the chi-square test of independence to detect shifts in age class proportions over time. The initial test included all periods. If a significant difference was detected ($p \leq 0.05$), each period was then tested against the following period to determine the point at which the age class shift occurred. Age classes which were $\geq 10\%$ of the total escapement in each river were included in the analysis.

Mid-eye to fork-of-tail length (mm) and sex were also recorded for all sockeye salmon sampled. Sex ratios and mean lengths were calculated by grouping all samples together

regardless of type or timing of sampling. Age classes which were $\geq 10\%$ of the total escapement in each river were included in length composition tables.

Age, sex and length data for sockeye salmon were summarized by Waltemyer (1994).

King and Tarbox (1990) indicated that sockeye and pink salmon exhibited differential migratory behavior in the Yentna River. They found that sockeye salmon were proportionally higher in the fish wheel catch between 12-2400 h and pink salmon were more frequently captured between 06-1200 h. This observation identified a potential source of error in the use of total daily adjusted fish wheel catches to apportion sonar counts. To overcome this potential bias, fish wheel catches used to apportion sonar counts were collected by operating the fish wheels in 4 time blocks of 6 h each over a 24 h period in 1993 and this schedule was continued in 1994.

RESULTS

Kenai River

An estimated 1,061,924 salmon migrated past the Kenai River sonar site from 2 July through 24 August (Davis and King 1994). Sockeye salmon composed 1,003,446 or 94.5% of the total fish enumerated (Table 1). The desired escapement goal range for this drainage is 400,000-700,000 fish. The estimated sockeye salmon spawning escapement (sonar count minus sport harvest above the Soldotna bridge) was 857,071 fish (Table 2). A total of 6,086 sockeye salmon were passed through the Hidden Lake weir. The late-run Russian River sockeye salmon escapement totaled 137,488 fish (Table 3).

Eighty percent of the sockeye salmon escapement passed the sonar counters in 31 d (Table 4; mean=18 d; range for 1979-94=6-31 d). The midpoint of the escapement was 1 August. Run timing was slightly different by bank. The midpoint on the north bank occurred on 30 July and on the south bank on 2 August. However, 75% of the north bank escapement had passed the counter by 5 August, but the 75% point was not attained on the south bank until 11 August. Sockeye salmon migration along the south bank of the river accounted for 48.1% of the total escapement (Table 5). There was one distinct peak in the daily numbers of fish passing the counters (Figure 2). Sonar counts attributed to species other than sockeye salmon were: pink, 46,107; coho, 7,421; and chinook, 4,950 salmon (Table 6).

Salmon migration along the south bank was shore oriented, with 94.0% of the counts within 10.5 m of the transducer (Figure 3). Salmon passage on the north bank was predominantly (91.0%) within 10.5 m of the transducer.

A pattern of increased salmon passage in the evening hours was observed on both banks but was more pronounced on the south bank (Figure 4). Fish passage between 16-2400 h accounted for 52.3% of the total migration (Figure 5).

A total of 6,016 sockeye salmon were captured in the fish wheels (Tables 7 and 8), from which 1,607 lengths and scale samples were obtained. The largest component (61.1%) of the sockeye salmon escapement was age-1.3 fish, followed by age-2.2 (17.8%) and -2.3 (12.1%) fish (Table 9). There was a significant ($df = 12$, $\chi^2 = 115.23$, $p = 0.05$) increase in the proportion of 2 ocean fish and a corresponding decrease in 3 ocean fish. Spawners bound for Russian River accounted for 11.7% of the total 2 ocean fish. Late-run sockeye salmon bound for Russian River were predominantly age-2.2 (82.6%) and -2.3 (11.0%) fish (Marsh 1994). Age-1.3 and -2.3 sockeye salmon were bound primarily for Quartz Creek, Tern Lake, the mainstem river, and the shorelines and outlets of Kenai and Skilak Lakes. Sockeye salmon bound for Hidden Lake were predominantly age-1.2 (Fandrei 1994). Mean length by sex was within historical bounds for age-1.3 fish but was the smallest recorded for age-1.2 and -2.2 fish (Table 10). The male-to-female ratio fell within historical bounds. Female spawners constituted 57.6% of the total escapement.

Kasilof River

Kasilof River sockeye salmon escapement estimates have ranged from 38,000 (1970) to 505,049 fish (1985, Table 11). A total of 205,117 salmon were counted at the Kasilof River sonar site from 12 June through 11 August 1994 (Table 12). The desired escapement range for this system is 150,000-250,000 sockeye salmon. Brood stock for artificial propagation at the Crooked Creek Hatchery (13,600 fish) was taken from Bear Creek (Fandrei 1994) resulting in 191,521 in-system spawners. Spawners in Bear Creek numbered 25,500, for a total of 39,100 sockeye salmon returning to the tributary (Table 13). Weir counts for Nikolai Creek were 63,723 sockeye salmon, and 10,347 sockeye salmon were passed through the weir at Glacier Flat Creek. At the time the weir was removed, an additional 3,000 fish were observed in this creek below the weir site (C. Woody, University of Washington, personal communication).

The midpoint of the sockeye salmon escapement occurred on 9 July, 4 d before the mean for the previous 15 years and the second earliest on record since 1981 (range 01-22 July; Table 14). Eighty percent of the escapement occurred in 35 d, 3 d greater than the historical mean (1979-93). Fish migrating adjacent to the north bank were observed earlier than those for the south bank. There were several peaks in daily passage of fish past the counting site (Figure 2).

Fifty-three percent of the salmon counts occurred on the south bank (Table 5), and 85.9% of the fish were within 8.0 m of the transducer (Figure 6). Fish distribution on the north bank was more shore oriented, where 85.2% of the total counts occurred within 5.2 m of the transducer.

The average hourly passage rate on the north bank exceeded the 4.2% average for a consistent passage rate 15-2300 h and during three periods on the south bank: 05-1000 h; 15-1900 h; and 22-2300 h (Figure 5). Salmon counted during these hours on the north bank accounted for 48.0% of the total and 58.0% of the bank total on the south bank. A more consistent passage rate was observed on the south bank than on the north bank (Figure 7).

A total of 3,514 sockeye salmon were captured in the Kasilof River fish wheel (Table 15), of which 849 were sampled for age, length, and sex characteristics. Sockeye salmon captured in the fish wheel consisted of age-2.2 (28.6%), -1.3 (28.3%), -1.2 (26.0%) and -2.3 (17.2%) fish (Table 16). The proportion of 2-ocean fish increased and 3-ocean fish decreased over time ($f=12$, $\chi^2=172.8$, $p=0.05$). Mean lengths by sex were within the historical range (Table 17). The male-to-female ratio for all age classes except age-2.3 was approximately equal. Age-2.3 fish had the lowest number of males-to-females (0.7:1) in the historical record. Female spawners comprised 52.1% of the escapement.

Crescent River

The estimate of sockeye salmon entering Crescent River was the lowest on record (30,355, Table 18). Daily counts from 28 June through 8 August did not exceed 2,500 fish (Table 19, Figure 2). Sockeye salmon represented 59.8% of the fish captured in the fish wheel (Table 20). The desired sockeye salmon escapement goal for this system is 50,000 to 100,000 fish.

The midpoint of the sockeye salmon escapement occurred on 23 July, 6 d after the historical mean date, and 80% of the escapement passed the site in 24 d (Table 21). The peak in daily passage occurred on 17 July. A slight difference in run timing between banks was detected. The midpoint occurred on 21 July on the north bank and 23 July on the south bank. The 80% point was reached the same day on both banks (31 July). Sixty five percent of the sockeye salmon migrated along the north bank (Table 6).

Spacial distribution of fish was strongly shore oriented, with 99.3% of the north bank counts within 2.4 m of the transducer and 99.6% of the south bank counts within 2.7 m of the transducer (Figure 8). North bank fish distribution was more offshore after day 33. The shift in north bank distribution of sonar counts occurred at the time an increase in the daily proportion of Dolly Varden char and Chum salmon in the fish wheel catch was observed. Fish migration rate (hourly passage) adjacent to the north bank exceeded a fixed hourly average during the period 12-2400 h (Figures 5 and 9). Sonar counts during those hours were 69.8% of the bank total. On the south bank the highest hourly passage rates occurred between 12-2200 h, accounting for 74.5% of the bank total.

A total of 1,269 sockeye salmon were captured in the fish wheel, of which 634 were sampled for age, length, and sex data. Age-1.3 fish were the most abundant (49.6%), with the other major components of the escapement represented by age-2.3 (30.5%) and age-2.2 fish (12.3%, Table 22). Testing of age class proportions over time detected no significant change. Average lengths by sex for age-1.3 and -2.3 fish were within the bounds of previous years observations, but age-2.2 fish were the smallest to appear in the historical data base (Table 23). Male-to-female ratios were within historical bounds for age-1.3 and -2.3 fish but age-2.2 fish had a male-to-female ratio of 4.2:1. Females accounted for 47.7% of the total sockeye salmon escapement. There were no recaptures of marked Dolly Varden char.

Yentna River

The lowest estimate of sockeye salmon escapement in the Yentna River occurred in 1988 (52,330 fish) and the highest in 1984 (149,375, Table 24). From 7 July through 12 August, 251,580 salmon were counted at the Yentna River sonar site, of which an estimated 128,032 were sockeye salmon (Table 25). The escapement goal range for the Yentna River is 100,000-150,000 sockeye salmon. Sonar counts apportioned to species other than sockeye salmon were: pink salmon, 79,178; coho salmon, 25,173; and chum salmon, 18,971. Estimates of coho and chinook salmon escapements for other tributaries of the Susitna River were also made (Table 26). No estimates for pink or chum salmon were available for the Susitna River above its confluence with the Yentna River.

The midpoint of the sockeye salmon escapement occurred on 26 July, 2 d later than the historical mean. Eighty percent of the escapement passed the counters in 19 d (Table 27). Run timing was not appreciably different by bank. Nearly all (92%) of the sockeye salmon migrated adjacent to the south bank (Table 5).

Of the salmon counted from the south bank, 95.1% were within 2.9 m of the transducer (Figure 10). On the north bank, 91.5% of the salmon were counted within 6.0 m of the transducer.

The seasonal average hourly passage rate on the north bank met or exceeded the constant hourly passage rate (4.2%) from 14-0400 h (Figure 2). Counts accumulated during these hours accounted for 72.6% of the north bank total. The fish passage rate on the north bank was more consistent than the fish passage rate on the south bank (Figure 11). A constant hourly passage rate was exceeded between 14-2200 h, and 24-0300 h on the south bank. Counts accumulated during these hours accounted for 60.4% of the south bank total. There was one distinct peak in the daily numbers of fish passing the counters (Figure 2).

A total of 9,625 sockeye salmon were captured in fish wheels at Yentna Station (Tables 28 and 29), of which 637 were sampled for age, sex, and length data. The major components of the escapement were ages-1.3 (43.2%), -1.2 (23.2%), and -2.3 (17.6%, Table 30). No significant differences ($df=12$, $\chi^2=16.8$, $p=0.05$) were detected in Yentna River age class proportions over time. Mean lengths for age-1.3 and -2.3 males were similar and were the largest on record. Mean lengths for age-1.3 and -2.3 females were equal and were the largest since 1987. Mean lengths for age-1.2 fish were also on the high end of the size range (Table 31). The male-to-female ratios were within historical ranges for all age classes. Female spawners composed 44.7% of the total sockeye salmon escapement.

Eighty percent of the pink salmon escapement occurred in 12 d, with the midpoint occurring on 25 July (Table 32). Pink salmon run duration (80%) in the Yentna River has ranged from 9-21 d. Migratory timing has been remarkably consistent, with the midpoint occurring between 27 and 30 July in 12 of the 14 years for which data is available.

DISCUSSION

The 1994 field season and sonar counting operations were similar to past years. Counting conditions on all rivers were thought to be within design and operational tolerances of the Bendix side-scanning sonar system because (1) salmon passage was inshore and near the bottom during the peak of the run, (2) salmon densities were generally adequate for system adjustment, and (3) one species, sockeye salmon, composed most of the run (73%-94%) except in Yentna River (51%).

Kenai River

The midpoint of the escapement occurred on 1 August, 10 d later than the 15 year mean. Run duration was extended to 31 d, 14 d longer than the 15 year mean. Extended commercial fishing periods were in effect for areas surrounding the terminus of the Kenai River until 29 July, after which the commercial fishery was closed for 3 d. The entry of an estimated 200,000 fish into the river during that 3 d period accounted for a second peak in counts on 2 August (Figure 2). This action probably had little effect on the midpoint and run duration although it did extend the sonar operation by increasing the number of days required to reach < 1% of the cumulative count for 3 consecutive days criteria for cessation of counting operations. The extended and late run timing (21 d later than the historical mean) observed at the counting site was also documented by the offshore test fishery where the midpoint was 4 d late, the latest on record (Ken Tarbox, ADF&G, Soldotna, personal communication). Approximately one half of the 300,000 fish which migrated past the sonar counters after 6 August were fish bound for Russian River, where the mean passage date was reached 5 - 6 d after the historical mean (L. Marsh, ADF&G, Soldotna, personal communication).

Age-1.2 fish composed 6.56% (65,899 fish) of the sockeye salmon escapement sampled from the fish wheel at the mile 19 sonar site. Of these, 12.5% had large fresh water annuli, characteristic of Hidden Lake spawners. From this an estimate of 8,237 age-1.2 fish bound for Hidden Lake was produced. Escapement enumeration at the Hidden Lake weir produced a count of 5,867 age-1.2 sockeye salmon, a difference of only 2,370 fish.

Historical spacial distribution of salmon migrating adjacent to the north bank of the Kenai River has been near-shore. However, at times higher counts were recorded in the distal portion of the counting range than in the proximal sectors, suggesting a potential for missing fish which passed outside of the counting range. These events usually occurred during the early portion of the counting operation, or when low water levels and low turbidity persisted into the counting period. We speculated that low water level combined with the long, gradual slope of the river's north bank substrate at the counting site and low turbidity were the main factors that contributed to the off-shore distribution pattern observed during these episodes.

Although some fish may not have been counted in these circumstances, we do not feel that magnitude of this error was significant. We reasoned that if large numbers of fish had passed outside the north bank counting range when distribution of fish was offshore, then the proportion of the total daily counts attributed to the south bank should have increased for those days. This is because fish passing adjacent to the south bank transducer were always well within the counting range. Regression analysis of 1994 daily proportions by bank yielded R^2 values of 0.96 when data for all days of operation were used and 0.74 when the proportions by bank for the period 1 through 13 July were used (the period when offshore distribution occurred on the north bank). Although these values are not significant, they did suggest that some undercounting occurred. We infer from these results that the error was probably limited to early season time periods when passage rates are low, and did not measurably alter the total escapement estimate. This supposition is supported by the low commercial set net harvest of Kenai River-bound-fish and low fish wheel catches at the mile 19 sonar site during early July. When the main body of fish arrived at the counting site, environmental conditions effecting fish behavior had changed (higher water levels and turbidity) and fish distribution was near shore.

Counts apportioned to pink salmon totaled 46,107. The range for even years when operation dates were similar (1980-94) is 3,647-262,394 counts apportioned to pink salmon.

Kasilof River

The midpoint date for the north bank preceded that of south bank by 5 d, and the 75% date for the north bank (17 July) preceded the south bank 75% date (27-July) by 9 days. This degree of difference in run timing between banks has not been previously observed

Run timing, counter limitations, and spawning locations relative to the sonar site made sonar escapement estimates for Kasilof River pink, coho, and chinook salmon impractical. Coho salmon entered the river primarily in August (G. Kyle, ADF&G, Soldotna, personal communication). The proportion of pink salmon was not known, but the average historical proportion of the pink salmon in the Kasilof River escapement is 1.9% (range 0.2-6.4%). Chinook salmon migrated past the sonar site during the time when sockeye were counted, but no counts were apportioned to this species. We believe that the ratio of sockeye salmon to chinook salmon captured in the fish wheel has been biased toward chinook salmon during the latter portion of the run (King and Tarbox 1991).

Crescent River

Prior to 1993 fish collected for age, sex and length determination were collected with the use of drifted gill nets and a fish trap. The installation of a fish wheel at Crescent River provided a larger sample size and probably reduced the degree of size selectivity characteristic of gear types formerly used. Dolly Varden char, which had not appeared in the catch in previous years, appeared in the fish wheel catch in 1993. We determined that the char captured at Crescent River were of adequate size to meet target detection

thresholds of the counters and included them in the apportionment of daily sonar counts in 1993-94. We also concluded that these fish were migratory based on morphological characteristics and results of marking all Dolly Varden char captured in 1994. Of the 548 marked char, none were recaptured. Counts apportioned to Dolly Varden char were 7,771, or 18.6% of the total escapement. If the proportion of Dolly Varden char is consistent between years, the implication is that sockeye salmon escapement into Crescent River historically has been over estimated.

Crescent River hourly fish passage rates peaked during the afternoon and evening hours following high tides (Figure 12) on 35 of the 42 d of operation. We concluded from this analysis that daily migration timing is probably related to high tides. However, we have not observed a diurnal bimodal entry pattern into Crescent River, so some other as yet unidentified variable(s) must also be influencing fish migration at this site.

All counts recorded on the south bank at Crescent River occurred in sectors one (99.7%) and two (0.3%) of the counting range. Printer skips (treated as false counts) regularly occurred in sectors one through six. Hourly averages for each sector were substituted where skips occurred or counts were deleted. Because of the spacial distribution of fish migrating adjacent to this bank, the method used for the treatment of false counts provided a more accurate estimate of daily escapement because it did not place a high hourly average count derived from sector one or two into sectors where very few targets were detected.

Yentna River

Yentna River age class composition was typical of previous years except for the high proportion of age-2.2 fish, which in 1994 were the largest on record. This age class has been a significant ($\geq 10\%$) contributor to the escapement for 3 consecutive years. It is unclear why this age class became a significant portion of the escapement.

The historical male-to-female ratio of 2-ocean sockeye salmon in the Yentna River has exceeded 1:1 in all years. Conversely, the ratio of males to females for 3-ocean fish has been below 1:1 in 7 of the 9 years when sampling occurred. These results could be produced by selectivity of commercial fishing gear for larger 3 ocean males. We compared the ratio of males to females in the commercial catch from this area (Northern District, general sub-district) and found no evidence that harvest influenced the disproportionate male-to-female ratios in the Yentna River escapement.

Enumeration activities ceased on the Yentna River on 12 August. Migratory timing information could not be calculated for chum and coho salmon because migration continued past that date. In years when counting operations extended until few salmon were present (1981-1984), ranges of 69.8%-92.0% (mean 78.7%) of the chum salmon escapement and 79.6%-89.9% (mean 84.8%) of the coho salmon escapement were recorded by 12 August (King and Tarbox 1986).

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Table 1. Estimated sockeye salmon escapement recorded by side-scanning sonar in the Kenai, Kasilof, Crescent, and Susitna Rivers 1978–1994.

Year	System			
	Kenai R. ^a	Kasilof R. ^b	Crescent R.	Susitna R. ^c
1978	398,900	116,600	^d	94,400
1979	285,020	152,179	86,654	156,980
1980	464,038	187,154	90,863	190,866
1981	407,639	256,625	41,213	139,401*–340,232
1982	619,831	180,239	58,957	215,856 ^f –265,332 113,847*
1983	630,340	210,271	92,122	112,314–175,936* 104,414*
1984	344,571	231,685	118,345	194,480 ^f –279,446* 149,375*
1985	502,820	505,049	128,628	107,124*–227,924*
1986	501,157	275,963	20,385 ^h	92,076*
1987	1,596,871	249,250	120,219	66,054*
1988	1,021,469	204,000 ⁱ	57,716	52,330*
1989	1,599,959	158,206	71,064	96,269*
1990	659,520	144,136	52,238	140,290*
1991	647,597	238,269	44,578	109,632*
1992	994,798	184,178	58,229	66,074*
1993	813,617	149,939	37,556	141,694*
1994	1,003,446	205,117	30,355	128,032*

^a Includes counts after 22 June (1978–87) and after 1 July (1988–94).

^b Includes counts or estimates prior to 15 June (1983–88) and post enumeration estimates (1981–86).

^c Sonar counts from Susitna Station unless otherwise indicated.

^d No counts conducted.

^e Sonar counts from Yentna Station only.

^f Sonar counts from Yentna Station and east bank of the Susitna River.

^g Counts from Yentna Station and mark-recapture estimate from Sunshine Station.

^h Counts through 16 July only.

ⁱ Combined counts from weirs on Bear and Glacier Flat Creeks and surveys of remaining spawning streams.

Table 2. Late-run Kenai River sockeye salmon escapement summary 1968–1994.

Year	Estimated Escapement at Sonar Site ^a	Russian River Sport Harvest ^b	Kenai River Mainstem Sport Harvest ^c	Estimated Total Harvest Above Sonar Site ^d	Sonar Count Less Sport Harvest
1968	88,000	5,820			
1969	53,000	1,150			
1970	73,000	600			
1971	300,000	10,730			
1972	318,000	16,050			
1973	367,000	8,930			
1974	161,000	8,500	8,030	16,530	144,470
1975	142,000	8,390	5,110	13,500	128,500
1976	380,000	13,700	13,140	26,840	353,160
1977	708,000	27,440	16,933	44,373	663,627
1978	398,900	24,530	24,542	49,072	349,828
1979	285,020	26,840	12,328	39,158	245,862
1980	464,038	33,500	18,592	52,082	411,956
1981	407,639	23,720	14,450	38,171	369,468
1982	619,831	10,320	38,400	48,718	571,113
1983	630,340	16,000	48,310	64,306	566,034
1984	344,571	21,970	11,160	33,250	311,321
1985	502,820	58,410	40,440	98,850	403,970
1986	501,157	30,810	47,920	78,730	422,427
1987	1,596,871	40,580	148,300	188,880	1,407,991
1988	1,021,469	19,540	91,770	111,310	910,159
1989	1,599,959	55,210	165,340	220,550	1,379,409
1990	659,520	56,180	87,575	140,559	518,961
1991	647,597	31,450	108,271	216,781	430,816
1992	994,798	26,101	161,957	188,058	806,740
1993	813,617	26,772	60,306	116,323	697,294
1994	1,003,446	26,375	120,000	146,375	857,071

^a Bendix Corp. multiple transducer sonar 1968–1977, side-scanning sonar 1978–1993.

^b Based on creel census data from Sport Fish Division, Soldotna.

^c Sport Fish Division Statewide Harvest Estimate, above the Soldotna Bridge (and sonar site) only.

^d Combined Russian River and mainstem (above bridge) harvests.

Table 3. Kenai River late-run sockeye salmon escapements in eight index areas 1969–1994.

Year	Railroad Creek ^b	Johnson Creek ^b	Carter– Moose Creek ^b	Plarmigan Creek ^b	Tern (Mud) Lake ^b	Quartz Creek ^c	Hidden Lake ^d	Russian River ^a		Total Index Area Escapement
								Above Weir	Below Weir	
1969	100	75	598	5	487	487	500	28,920	1,100	32,272
1970	99	118	348	7	561	200	323	28,200	220	30,076
1971	194	160	3,201	45	1,370	808	1,958	54,430	10,000	72,166
1972	700	150	3,400		1,200		4,956	79,000	6,000	95,406
1973	521	1,714	660	1,041	1,731	3,173	690	24,970	6,690	41,190
1974		46	939	558		255	1,150	24,650	2,210	29,808
1975	522	105	1,278	186	1,214	1,068	1,375	31,970	630	38,348
1976	1,032		5,558		1,548	3,372	4,860	31,950	3,470	51,790
1977	1,262	450	6,515	1,513	2,230	3,037	1,055	21,410	17,090	54,562
1978	1,749	780	1,933	3,529	1,126	10,627	4,647	32,760	18,330	75,481
1979		588	3,986	523	1,693	277	5,762	87,920	3,920	104,669
1980	1,259	253	4,879	5,752	2,575	7,982	27,448	83,980	3,220	137,348
1981	1,276	142	4,370	1,421	3,402	5,998	15,939	44,530	4,160	81,238
1982	2,518	498	4,752	7,525	4,300	70,540	8,648	30,790	45,000	174,571
1983	1,289	338	1,819	9,709		73,345	11,297	34,040	44,000	175,837
1984	2,090	939	5,927	18,000	2,728	37,659	27,792	92,660	3,000	190,795
1985	2,884	151	5,928	26,879			24,784	136,970	8,650	206,246
1986	600	245	1,659				17,530	40,420	6,022	66,476
1987	736	74	625	14,187		45,400	43,487	53,930	76,732	235,171
1988	1,990	1,243	1,607	31,696			50,907	42,480	28,840	158,763
1989	4,959	2,276	5,958	3,484			7,770	138,320	28,480	191,247
1990			2,306	3,230			77,959	83,336	11,760	178,591
1991			750 ^e	2,764 ^e	1,750 ^f		35,676	78,175	22,267	141,382
1992			1,106 ^e	3,147 ^e	970 ^f		32,912	63,478	4,980	106,593
1993							11,582	99,259	12,258	123,099
1994				1,204			6,086	122,277	15,211	144,778

^a 1969–75, ADF&G archives, Division of Sport Fish, Anchorage. 1976–94, Marsh, L. 1995.

^b United States Department of Agriculture, Forest Service, Seward, Alaska (1984–92, 1994).

^c FRED Division weir count (1982–83).

^d Weir count: 1971, 1973, 1976–89 (FRED Division); 1990–94 (Cook Inlet Aquaculture Association).

^e Carter–Moose Creek survey conducted on lower 1.0 mile of creek, Plarmigan Creek survey conducted on lower 1.5 miles of creek (1991–1992, 1994).

^f Survey conducted on an unnamed stream at eastern end of Tern (Mud) Lake.

Table 4. Cumulative proportion by date of sockeye salmon counts recorded in the Kenai River 1979 – 1994.

Date	Cumulative Proportion ^a															
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
22-Jun	0.001	0.002	0.001	0.002	0.001	0.003	0.001	0.000	0.001							
23-Jun	0.003	0.004	0.001	0.003	0.001	0.007	0.002	0.002	0.002							
24-Jun	0.006	0.005	0.002	0.004	0.002	0.010	0.003	0.003	0.002							
25-Jun	0.008	0.006	0.003	0.004	0.003	0.012	0.004	0.003	0.002							
26-Jun	0.010	0.008	0.004	0.005	0.004	0.013	0.005	0.004	0.003							
27-Jun	0.012	0.008	0.006	0.006	0.005	0.015	0.006	0.004	0.004							
28-Jun	0.013	0.009	0.007	0.007	0.006	0.017	0.007	0.006	0.005							
29-Jun	0.015	0.010	0.008	0.007	0.006	0.018	0.009	0.006	0.006							
30-Jun	0.017	0.011	0.009	0.008	0.007	0.021	0.010	0.007	0.007							
01-Jul	0.019	0.012	0.010	0.009	0.007	0.023	0.014	0.008	0.007	0.000	0.000	0.001	0.001	0.003	0.004	
02-Jul	0.020	0.013	0.012	0.010	0.008	0.024	0.016	0.009	0.008	0.000	0.001	0.001	0.003	0.005	0.010	0.000
03-Jul	0.023	0.014	0.012	0.011	0.008	0.025	0.017	0.010	0.008	0.001	0.001	0.003	0.004	0.008	0.013	0.001
04-Jul	0.025	0.015	0.013	0.011	0.009	0.027	0.019	0.011	0.008	0.001	0.001	0.010	0.005	0.010	0.019	0.001
05-Jul	0.030	0.016	0.013	0.012	0.009	0.029	0.021	0.012	0.009	0.001	0.002	0.019	0.012	0.011	0.037	0.002
06-Jul	0.050	0.016	0.014	0.012	0.009	0.031	0.024	0.013	0.009	0.002	0.006	0.029	0.018	0.014	0.058	0.003
07-Jul	0.067	0.017	0.016	0.013	0.010	0.032	0.026	0.014	0.009	0.003	0.011	0.036	0.019	0.015	0.061	0.007
08-Jul	0.077	0.017	0.018	0.013	0.010	0.036	0.030	0.014	0.010	0.003	0.014	0.044	0.020	0.016	0.067	0.011
09-Jul	0.082	0.018	0.064	0.015	0.011	0.044	0.032	0.015	0.010	0.003	0.017	0.049	0.022	0.018	0.081	0.013
10-Jul	0.086	0.018	0.186	0.016	0.013	0.054	0.033	0.015	0.010	0.011	0.021	0.050	0.024	0.020	0.085	0.016
11-Jul	0.089	0.019	0.262	0.016	0.017	0.063	0.036	0.015	0.010	0.063	0.024	0.052	0.028	0.022	0.087	0.019
12-Jul	0.092	0.020	0.366	0.017	0.021	0.067	0.038	0.016	0.011	0.088	0.046	0.054	0.034	0.043	0.092	0.021
13-Jul	0.095	0.020	0.463	0.019	0.041	0.071	0.039	0.018	0.015	0.141	0.100	0.057	0.037	0.111	0.101	0.023
14-Jul	0.100	0.021	0.512	0.021	0.085	0.073	0.048	0.039	0.017	0.185	0.162	0.060	0.038	0.175	0.210	0.025
15-Jul	0.126	0.027	0.549	0.026	0.174	0.076	0.066	0.051	0.033	0.222	0.211	0.064	0.041	0.202	0.301	0.032
16-Jul	0.170	0.057	0.559	0.047	0.242	0.112	0.104	0.061	0.043	0.274	0.242	0.068	0.046	0.218	0.400	0.062
17-Jul	0.238	0.310	0.572	0.067	0.297	0.173	0.111	0.073	0.052	0.303	0.290	0.138	0.058	0.229	0.485	0.073
18-Jul	0.342	0.489	0.605	0.182	0.437	0.307	0.114	0.086	0.058	0.340	0.347	0.279	0.086	0.246	0.517	0.122
19-Jul	0.504	0.607	0.667	0.322	0.566	0.363	0.115	0.102	0.069	0.375	0.367	0.344	0.136	0.255	0.533	0.164
20-Jul	0.670	0.777	0.747	0.474	0.695	0.406	0.116	0.113	0.141	0.409	0.421	0.400	0.194	0.284	0.557	0.190
21-Jul	0.795	0.899	0.803	0.563	0.766	0.464	0.120	0.174	0.235	0.464	0.500	0.457	0.225	0.334	0.582	0.232
22-Jul	0.840	0.920	0.835	0.598	0.796	0.555	0.178	0.269	0.319	0.569	0.566	0.473	0.261	0.370	0.599	0.269
23-Jul	0.872	0.926	0.848	0.642	0.813	0.652	0.291	0.322	0.406	0.679	0.639	0.518	0.308	0.402	0.612	0.298
24-Jul	0.888	0.932	0.864	0.681	0.833	0.720	0.463	0.382	0.488	0.744	0.679	0.576	0.376	0.451	0.624	0.343
25-Jul	0.913	0.935	0.876	0.722	0.844	0.781	0.574	0.471	0.570	0.785	0.698	0.675	0.424	0.535	0.635	0.399
26-Jul	0.925	0.938	0.894	0.752	0.861	0.833	0.693	0.618	0.640	0.812	0.729	0.719	0.477	0.612	0.670	0.420
27-Jul	0.931	0.944	0.911	0.842	0.865	0.867	0.753	0.730	0.694	0.827	0.774	0.729	0.546	0.678	0.720	0.428
28-Jul	0.934	0.947	0.921	0.883	0.872	0.897	0.822	0.783	0.740	0.836	0.806	0.744	0.637	0.740	0.748	0.432

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Table 4. (p. 2 of 2)

Date	Cumulative Proportion															
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
29-Jul	0.939	0.952	0.932	0.903	0.878	0.913	0.864	0.816	0.766	0.844	0.831	0.796	0.711	0.798	0.773	0.440
30-Jul	0.945	0.955	0.940	0.918	0.882	0.921	0.897	0.862	0.790	0.847	0.846	0.846	0.772	0.830	0.795	0.450
31-Jul	0.950	0.957	0.948	0.931	0.891	0.928	0.911	0.897	0.831	0.850	0.856	0.867	0.838	0.843	0.814	0.469
01-Aug	0.953	0.960	0.955	0.940	0.906	0.933	0.919	1.000	0.871	0.854	0.875	0.879	0.885	0.854	0.827	0.525
02-Aug	0.955	0.962	0.964	0.946	0.916	0.937	0.922		0.899	0.859	0.888	0.896	0.912	0.864	0.845	0.620
03-Aug	0.958	0.964	1.000	0.951	0.920	0.943	0.925		0.917	0.863	0.899	0.932	0.927	0.871	0.858	0.673
04-Aug	0.961	0.966		0.955	0.934	0.948	0.929		0.930	0.873	0.908	0.963	0.934	0.877	0.866	0.696
05-Aug	0.965	0.968		1.000	0.964	0.956	0.931		0.943	0.894	0.916	0.978	0.939	0.888	0.879	0.713
06-Aug	0.968	0.970			0.977	0.960	0.935		0.953	0.914	0.930	0.991	0.946	0.903	0.908	0.728
07-Aug	0.971	0.972			0.983	0.963	0.938		0.962	0.933	0.949	1.000	0.953	0.915	0.927	0.740
08-Aug	0.973	0.974			0.989	0.969	0.943		0.967	0.944	0.960		0.967	0.930	0.938	0.748
09-Aug	0.977	0.975			0.993	1.000	0.947		0.972	0.953	0.966		0.979	0.942	0.959	0.757
10-Aug	0.981	0.978			0.996		0.953		0.979	1.000	0.974		0.988	0.955	0.970	0.771
11-Aug	0.987	0.982			0.999		0.960		0.985		0.985		0.995	0.969	0.979	0.791
12-Aug	0.993	0.985			1.000		1.000		0.988		0.990		1.000	0.981	0.989	0.814
13-Aug	0.995	0.992							0.991		0.994			1.000	1.000	0.835
14-Aug	0.996	0.993							0.998		0.998					0.857
15-Aug	1.000	0.993							1.000		1.000					0.874
16-Aug		0.995														0.896
17-Aug		0.996														0.914
18-Aug		0.997														0.926
19-Aug		0.997														0.942
21-Aug		0.997														0.963
21-Aug		0.998														0.977
22-Aug		0.998														0.985
23-Aug		0.999														0.992
24-Aug		0.999														1.000
25-Aug		0.999														
26-Aug		0.999														
27-Aug		0.999														
28-Aug		1.000														
Midpoint	19-Jul	19-Jul	14-Jul	21-Jul	19-Jul	10-Jul	25-Jul	26-Jul	25-Jul	22-Jul	21-Jul	23-Jul	27-Jul	25-Jul	18-Jul	01-Aug
No. days for 80% ^b	12	6	18	12	18	14	16	12	14	25	23	18	15	25	26	31

^a Proportion accrued on last day (1981, 1982, 1984-1986, 1988) represents that portion of the escapement estimated to have entered the river after termination of counting operations.

^b Inclusive dates: date proportion of escapement reached 10% through date proportion of escapement reached 90%.

Table 5. Distribution of sockeye salmon escapement by bank recorded by side-scanning sonar in the Kenai, Kasilof, Crescent and Yentna Rivers 1979–1994.

Year	Percentage of Total Fish Targets							
	Kenai River		Kasilof River		Crescent River		Yentna River	
	North Bank	South Bank	North Bank	South Bank	North Bank	South Bank	North Bank	South Bank
1979	72	28	53	47				
1980	61	39	52	48	49	51		
1981	72	28	69	31	57	43		
1982	39	61	73	27	54	46		
1983	42	58	51	49	39	61		
1984	65	35	56	44	71	28		
1985	54	46	70	30	70	30	9	91
1986	62	38	57	43	84	16	32	68
1987	48	52	55	45	64	36	10	90
1988	47	53	32	68	53	47	8	92
1989	57	43	39	61	52	48	12	88
1990	62	38	29	71	44	56	2	98
1991	73	27	39	61	33	67	8	92
1992	60	40	45	55	56	44	5	95
1993	49	51	28	72	41	56	14	86
1994	52	48	47	53	65	35	8	92

Table 6. Estimated salmon escapement into the Kenai River, north and south banks combined, 2 July through 24 August 1994. Species composition of daily sonar counts based on fish wheel catches.

Date	Sockeye		Pink		Coho		Chinook	
	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
02-Jul	399	399	22	22	0	0	13	13
03-Jul	301	700	17	39	0	0	9	22
04-Jul	534	1,234	31	70	0	0	17	39
05-Jul	1,091	2,325	63	133	0	0	34	73
06-Jul	859	3,184	49	182	0	0	27	100
07-Jul	4,022	7,206	230	412	0	0	128	228
08-Jul	3,522	10,728	202	614	0	0	112	340
09-Jul	2,495	13,223	144	758	0	0	79	419
10-Jul	2,403	15,626	137	895	0	0	77	496
11-Jul	3,003	18,629	173	1,068	0	0	95	591
12-Jul	2,200	20,829	126	1,194	0	0	70	661
13-Jul	1,858	22,687	106	1,300	0	0	59	720
14-Jul	2,145	24,832	124	1,424	0	0	68	788
15-Jul	7,204	32,036	413	1,837	0	0	230	1,018
16-Jul	30,546	62,582	105	1,942	0	0	106	1,124
17-Jul	10,369	72,951	35	1,977	0	0	36	1,160
18-Jul	49,484	122,435	170	2,147	0	0	171	1,331
19-Jul	41,634	164,069	0	2,147	0	0	0	1,331
20-Jul	26,201	190,270	80	2,227	0	0	158	1,489
21-Jul	42,744	233,014	129	2,356	0	0	259	1,748
22-Jul	37,055	270,069	0	2,356	0	0	0	1,748
23-Jul	29,363	299,432	0	2,356	0	0	0	1,748
24-Jul	45,222	344,654	0	2,356	0	0	0	1,748
25-Jul	55,772	400,426	0	2,356	0	0	0	1,748
26-Jul	20,567	420,993	132	2,488	0	0	0	1,748
27-Jul	8,027	429,020	52	2,540	0	0	0	1,748
28-Jul	4,761	433,781	31	2,571	0	0	0	1,748
29-Jul	7,860	441,641	0	2,571	0	0	0	1,748
30-Jul	9,935	451,576	0	2,571	0	0	0	1,748
31-Jul	19,493	471,069	0	2,571	0	0	0	1,748
01-Aug	55,382	526,451	0	2,571	0	0	0	1,748
02-Aug	95,473	621,924	0	2,571	0	0	0	1,748
03-Aug	53,274	675,198	0	2,571	0	0	0	1,748
04-Aug	23,549	698,747	636	3,207	0	0	382	2,130
05-Aug	16,884	715,631	456	3,663	0	0	274	2,404
06-Aug	14,713	730,344	96	3,759	0	0	98	2,502
07-Aug	12,394	742,738	241	4,000	0	0	0	2,502
08-Aug	7,796	750,534	266	4,266	153	153	38	2,540
09-Aug	9,241	759,775	316	4,582	180	333	45	2,585
10-Aug	13,434	773,209	458	5,040	262	595	66	2,651
11-Aug	20,892	794,101	2,947	7,987	385	980	769	3,420
12-Aug	22,260	816,361	3,141	11,128	409	1,389	820	4,240
13-Aug	21,054	837,415	3,854	14,982	1,021	2,410	67	4,307
14-Aug	22,078	859,493	1,481	16,463	604	3,014	0	4,307
15-Aug	17,841	877,334	976	17,439	493	3,507	11	4,318
16-Aug	21,482	898,816	1,690	19,129	977	4,484	32	4,350
17-Aug	18,149	916,965	2,480	21,609	744	5,228	124	4,474
18-Aug	11,871	928,836	1,434	23,043	385	5,613	20	4,494
19-Aug	16,437	945,273	2,077	25,120	546	6,159	0	4,494
20-Aug	21,492	966,765	2,758	27,878	732	6,891	0	4,494
21-Aug	13,544	980,309	8,041	35,919	263	7,154	189	4,683
22-Aug	8,094	988,403	3,612	39,531	94	7,248	95	4,778
23-Aug	6,578	994,981	2,572	42,103	68	7,316	68	4,846
24-Aug	8,465	1,003,446	4,004	46,107	105	7,421	104	4,950

Table 7. Daily fish wheel catch by species for the north bank of the Kenai River, 8 July through 24 August 1994.¹

Date	Hours open	Sockeye		Pink		Coho		Chinook	
		Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
08-Jul	40.5	46	46	1	1	0	0	1	1
09-Jul	24.3	24	70	2	3	0	0	0	1
10-Jul	23.8	17	87	3	6	0	0	1	2
11-Jul	23.5	13	100	1	7	0	0	1	3
12-Jul	24.0	12	112	0	7	0	0	1	4
13-Jul	24.0	4	116	0	7	0	0	1	5
14-Jul	24.0	15	131	1	8	0	0	0	5
15-Jul	24.0	26	157	1	9	0	0	1	6
16-Jul	11.8	55	212	0	9	0	0	0	6
17-Jul	7.8	40	252	1	10	0	0	0	6
18-Jul	18.5	195	447	0	10	0	0	0	6
19-Jul	4.0	240	687	0	10	0	0	0	6
20-Jul	2.5	128	815	1	11	0	0	2	8
21-Jul	2.0	202	1,017	0	11	0	0	0	8
22-Jul	2.4	77	1,094	0	11	0	0	0	8
23-Jul	3.5	196	1,290	0	11	0	0	0	8
24-Jul	2.5	140	1,430	0	11	0	0	0	8
25-Jul	6.2	107	1,537	0	11	0	0	0	8
26-Jul	2.5	73	1,610	0	11	0	0	0	8
27-Jul	15.0	56	1,666	1	12	0	0	0	8
28-Jul	25.0	27	1,693	0	12	0	0	0	8
29-Jul	24.4	32	1,725	0	12	0	0	0	8
30-Jul	9.5	56	1,781	0	12	0	0	0	8
31-Jul	24.0	55	1,836	1	13	0	0	0	8
01-Aug	25.0	257	2,093	1	14	1	1	0	8
02-Aug	1.5	360	2,453	0	14	0	1	0	8
03-Aug	4.2	238	2,691	0	14	0	1	0	8
04-Aug	3.8	117	2,808	3	17	0	1	3	11
05-Aug	5.2	68	2,876	2	19	0	1	0	11
06-Aug	5.5	151	3,027	1	20	0	1	1	12
07-Aug	6.5	205	3,232	4	24	0	1	0	12
08-Aug	13.5	34	3,266	0	24	0	1	0	12
09-Aug	19.1	93	3,359	4	28	3	4	0	12
10-Aug	23.2	77	3,436	3	31	0	4	1	13
11-Aug	23.0	98	3,534	16	47	3	7	3	16
12-Aug	28.2	65	3,599	7	54	0	7	3	19
13-Aug	6.5	118	3,717	48	102	9	16	1	20
14-Aug	2.0	233	3,950	22	124	5	21	0	20
15-Aug	7.0	651	4,601	43	167	14	35	1	21
16-Aug	3.8	213	4,814	31	198	16	51	1	22
17-Aug	7.9	233	5,047	20	218	6	57	5	27
18-Aug	14.9	183	5,230	15	233	3	60	1	28
19-Aug	8.7	66	5,296	3	236	0	60	0	28
20-Aug	11.3	56	5,352	3	239	2	62	0	28
21-Aug	4.8	45	5,397	7	246	0	62	0	28
22-Aug	19.9	46	5,443	9	255	0	62	0	28
23-Aug	26.7	28	5,471	9	264	0	62	0	28
24-Aug	32.0	129	5,600	26	290	3	65	1	29

¹ Other species captured included: 14 rainbow trout; 65 Dolly Varden char; 3 whitefish.

Table 8. Daily fish wheel catch by species for the south bank of the Kenai River, 13 August through 24 August 1994. ^a

Date	Hours open	Sockeye		Pink		Coho		Chinook	
		Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
13-Aug	9.0	16	16	0	0	0	0	0	0
14-Aug	9.3	36	52	3	3	1	1	0	0
15-Aug	10.9	54	106	2	5	1	2	0	0
16-Aug	8.0	84	190	4	9	4	6	0	0
17-Aug	9.5	45	235	1	10	1	7	0	0
18-Aug	12.4	16	251	4	14	4	11	0	0
19-Aug	11.8	53	304	7	21	1	12	0	0
20-Aug	11.3	73	377	18	39	3	15	0	0
21-Aug	5.0	21	398	32	71	1	16	1	1
22-Aug	15.0	4	402	4	75	0	16	0	1
23-Aug	19.1	12	414	0	75	0	16	0	1
24-Aug	12.0	2	416	4	79	0	16	0	1

^a Other species captured included: 14 Dolly Varden char.

Table 9. Age composition of sockeye salmon collected in the Kenai River 1970–1994.

Year	Percentage Composition by Age Class ^{a b}								Sample Size
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	Other	
1970	tr	10.0	17.0	tr	26.0	25.0	15.0	6.0	225
1971	0.0	8.0	39.0	1.0	3.0	38.0	11.0	0.0	168
1972	0.0	21.0	34.0	0.0	0.0	23.0	20.0	0.0	403
1973	0.0	5.0	68.0	1.0	1.0	8.0	16.0	0.0	632
1974	2.0	18.0	46.0	0.0	3.0	18.0	12.0	0.0	295
1975	2.0	10.0	36.0	2.0	4.0	31.0	14.0	1.0	162
1976	1.0	46.0	20.0	0.0	2.0	22.0	8.0	1.0	948
1977	0.0	6.0	76.0	1.0	tr	7.0	10.0	0.0	1,265
1978	0.0	2.5	86.7	0.0	0.0	4.9	5.4	tr	811
1979	tr	20.2	61.1	0.0	0.0	11.8	6.2	tr	601
1980	0.0	27.7	45.1	0.0	0.0	16.2	10.1	tr	715
1981	0.0	16.2	70.9	0.0	0.0	8.1	4.8	0.0	1,757
1982	0.1	5.8	87.5	tr	0.0	2.9	3.7	0.0	1,787
1983	0.4	8.2	79.1	0.2	0.5	2.2	8.9	0.4	1,765
1984	0.2	23.4	38.2	3.5	6.0	12.8	19.2	2.2	2,364
1985	0.1	15.9	56.4	0.3	0.1	14.7	11.4	1.1	2,201
1986	0.0	31.8	39.5	0.7	0.3	8.2	18.0	1.5	789
1987	0.0	12.8	78.4	0.1	0.0	3.2	5.2	0.3	745
1988	0.3	11.6	74.2	0.4	0.2	3.1	10.2	0.1	1,420
1989	0.1	9.1	75.3	1.0	0.5	4.1	9.7	0.2	2,275
1990	0.6	21.6	41.4	0.6	0.3	13.7	21.1	0.8	1,513
1991	0.2	48.2	31.6	0.1	0.5	5.7	11.4	2.7	2,504
1992	0.0	2.9	79.4	tr	tr	6.1	11.0	tr	1,338
1993	0.3	12.2	30.5	2.6	6.3	6.4	41.2	0.5	2,088
1994	0.3	6.6	61.1	0.8	0.8	17.8	12.1	0.5	1,341

^a Percentages weighted by total numbers in the escapement: 1978 (Bethe et al. 1980), 1979–1982, 1984–1994.

^b 1978–1994 from Waltemyer, ADF&G, Soldotna.

Table 10. Length composition of the major age classes of sockeye salmon collected in the Kenai River 1980–1994. Length measured from mid–eye to fork–of–tail. ^a

Year	Age Class	Male			Female			Ratio Male – Female
		Ave Length (mm)	Stdnd Error	Sample Size	Ave Length (mm)	Stdnd Error	Sample Size	
1980	1.2	482	4	168	494	4	100	1.7:1
1981		493	6	85	513	6	73	1.2:1
1982		483	9	70	505	13	32	2.2:1
1983		524	9	25	520	6	30	0.8:1
1984		474	3	280	473	4	196	1.4:1
1985		492	3	184	490	3	186	1.0:1
1986		488	4	155	492	6	96	1.6:1
1987		514	8	39	503	5	56	0.7:1
1988		522	8	79	511	4	84	0.9:1
1989		493	6	114	494	4	92	1.2:1
1990		474	0	168	478	0	127	1.3:1
1991		488	2	613	497	13	577	1.1:1
1993		474	4	123	481	4	132	0.9:1
1994		452	5	46	462	6	42	1.1:1
1980	1.3	580	3	180	561	2	192	0.9:1
1981		590	2	290	569	1	430	0.7:1
1982		596	2	723	572	1	841	0.9:1
1983		598	2	215	577	1	269	0.8:1
1984		582	2	385	559	1	395	1.0:1
1985		575	2	496	552	1	824	0.6:1
1986		584	3	112	564	2	200	0.6:1
1987		605	2	183	596	1	401	0.5:1
1988		598	1	428	572	2	624	0.7:1
1989		600	1	831	575	1	881	0.9:1
1990		586	0	358	559	0	318	1.1:1
1991		561	2	357	539	1	441	0.8:1
1992		572	2	370	547	1	714	0.5:1
1993		583	2	247	556	2	390	0.6:1
1994		579	2	367	552	1	452	0.8:1
1984	2.2	505	4	116	508	3	159	0.7:1
1985		513	4	132	513	3	196	0.7:1
1994		481	4	67	488	2	171	0.4:1
1980	2.3	589	3	67	579	3	80	0.8:1
1982		598	5	46	580	8	21	2.2:1
1983		595	4	25	582	4	36	0.7:1
1984		570	2	210	557	2	192	1.1:1
1985		570	3	106	555	2	129	0.8:1
1986		585	5	52	568	3	89	0.6:1
1988		596	3	53	577	3	92	0.6:1
1989		600	3	112	579	2	108	1.0:1
1990		589	0	177	568	0	132	1.3:1
1991		572	2	153	543	3	139	1.1:1
1992		569	4	46	546	2	88	0.5:1
1993		583	2	357	560	1	503	0.7:1
1994		578	4	73	551	3	89	0.8:1

^a 1980–1994 from Waltemyer, ADF&G, Soldotna.

Table 11. Kasilof River sockeye salmon escapement 1968–1994.

Year	Escapement Estimated by Sonar Count ^a	Fish used for Artificial Propagation of Tustumena Lake ^b	Sonar Count Less Egg Take ^c
1968	89,000		
1969	46,000		
1970	38,000		
1971			
1972	113,000		
1973	40,000		
1974	70,000	205	69,795
1975	48,000	3,365	44,635
1976	139,000	5,463	133,537
1977	155,300	1,794	153,506
1978	116,600	6,681	109,919
1979	152,179	3,024	149,155
1980	187,154	6,030	181,124
1980	256,625	9,700	246,925
1982	180,239	11,571	168,668
1983	210,271	9,903	200,368
1984	231,685	11,141	220,544
1985	505,049	11,280	493,769
1986	275,963	11,952	264,011
1987	249,246	9,865	239,381
1988	204,000 ^d	9,387	195,000
1989	158,206	7,367	150,839
1990	144,136	6,831	137,305
1991	238,269	8,850	229,419
1992	184,178	6,550	177,628
1993	149,939	9,098	140,841
1994	205,117	13,596 ^e	191,521

^a Multiple transducer sonar counts rounded to the nearest thousand (1968–1978) from Namtvedt et al. (1979).

^b From Cross et al. (1983): 1974–1980; FRED Div., Soldotna, Ak. files: 1981–1992; Fandrei, Cook Inlet Aquaculture Association: 1993–1994.

^c Considered estimate of natural spawners above sonar site.

^d Combined counts from weirs on Bear and Glacier Flat Creeks and surveys of spawning streams.

^e Includes 290 fish not used for artificial propagation of Tustumena Lake, Fandrei (1995).

Table 12. Estimated salmon escapement into the Kaslof River, north and south banks combined, 12 June through 11 August 1994.

Date	Daily	Cum	Date	Daily	Cum
12-Jun	96	96	13-Jul	2,648	115,913
13-Jun	399	495	14-Jul	3,956	119,869
14-Jun	426	921	15-Jul	7,901	127,770
15-Jun	491	1,412	16-Jul	2,609	130,379
16-Jun	725	2,137	17-Jul	8,981	139,360
17-Jun	653	2,790	18-Jul	6,520	145,880
18-Jun	643	3,433	19-Jul	4,223	150,103
19-Jun	645	4,078	20-Jul	3,766	153,869
20-Jun	1,023	5,101	21-Jul	2,620	156,489
21-Jun	929	6,030	22-Jul	1,629	158,118
22-Jun	933	6,963	23-Jul	1,376	159,494
23-Jun	1,135	8,098	24-Jul	2,414	161,908
24-Jun	1,629	9,727	25-Jul	1,943	163,851
25-Jun	2,092	11,819	26-Jul	1,424	165,275
26-Jun	2,651	14,470	27-Jul	1,584	166,859
27-Jun	4,787	19,257	28-Jul	2,494	169,353
28-Jun	7,252	26,509	29-Jul	4,089	173,442
29-Jun	8,864	35,373	30-Jul	4,698	178,140
30-Jun	9,668	45,041	31-Jul	4,925	183,065
01-Jul	6,187	51,228	01-Aug	7,188	190,253
02-Jul	1,189	52,417	02-Aug	3,201	193,454
03-Jul	5,368	57,785	03-Aug	1,778	195,232
04-Jul	8,307	66,092	04-Aug	1,452	196,684
05-Jul	2,218	68,310	05-Aug	1,419	198,103
06-Jul	8,536	76,846	06-Aug	1,310	199,413
07-Jul	12,767	89,613	07-Aug	937	200,350
08-Jul	9,450	99,063	08-Aug	890	201,240
09-Jul	3,747	102,810	09-Aug	1,173	202,413
10-Jul	6,859	109,669	10-Aug	1,411	203,824
11-Jul	2,079	111,748	11-Aug	1,293	205,117
12-Jul	1,517	113,265			

Table 13. Kasilof River peak sockeye salmon escapement counts in seven index areas 1975– 1994.

Year	Nikolai Creek ^a	Crystal Creek ^a	Clear Creek ^a	Glacier Flat Creek ^b	Seepage Creek ^a	Moose Creek ^a	Bear Creek ^b	Total Index Count ^c
1975	5,700	400	300	14,400	3,700	3,300	27,700	55,500
1976	12,000	800	300	7,100	800	14,000	51,800	86,800
1977	29,100	600	1,800	5,800	800	16,600	58,000	112,700
1978	34,200	200	200	4,700	1,100	15,900	43,400	99,700
1979	19,100	500	400	5,600	800	8,100	35,900	70,400
1980	10,000	1,000	2,100	15,500	1,800	15,600	125,000	171,000
1981	36,000	860	2,978	40,071	3,376	12,968	75,117	171,370
1982	16,800	1,785	4,183	17,348	1,638	13,400	51,350	106,504
1983	17,100	1,657	860	38,776	3,305	19,245	61,957	142,900
1984	8,270	141	2,619	76,217	6,250	13,999	54,328	161,824
1985 ^d	17,500	800	3,500	121,400	5,700	9,200	120,400	278,500
1986 ^d	11,900	1,400	2,700	60,600	2,000	21,200	102,900	202,700
1987	9,002	1,385	7,704	61,000	791	17,601	71,250	168,733
1988	10,841	593	5,809	40,015	1,387	17,727	127,532	203,904
1989	4,818	1,033	559	20,156	940	17,058	62,941	107,505
1990	7,474	879	220	14,355	1,217	18,800	46,300	89,245
1991	21,582	391	1,223	12,068	1,661	18,105	68,880	123,910
1992	10,145	1,105	1,979	9,144	349	15,235	44,100	82,057
1993							36,002	36,002
1994	63,723			13,347 ^e			39,100	116,170

^a Commercial Fisheries Division stream survey counts (1975–85); FRED Division stream survey counts (1982–92); U.S. Biological Service weir count (Nikolai Creek 1994).

^b FRED Division weir count, 1980–90, 1992. 1991 count is result of foot survey. 1993 count is result of foot and aerial survey and weir count, Cook Inlet Aquaculture Association, Gary Fandrei (personal communication).

^c Counts standardized to common unit for years when entire stream not surveyed.

^d Flagg (1986). Numbers rounded to nearest 100 fish.

^e U.S. Biological Service weir count (Glacier Flat Creek 1994). 1994 Glacier Flat Creek count includes 10,347 sockeye salmon passed through the weir and an estimated 3,000 sockeye salmon spawning downstream of the weir.

Table 14. Cumulative proportion by date of salmon counts recorded in the Kasilof River 1979–1994.

Date	Cumulative Proportion ^{a,b}															
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
14–May			0.000													
15–May			0.001													
16–May			0.003													
17–May			0.003													
18–May			0.005													
19–May			0.006													
20–May			0.006													
21–May			0.007													
22–May			0.008													
23–May	0.000		0.008													
24–May	0.003		0.010													
25–May	0.004		0.011													
26–May	0.006		0.012													
27–May	0.008		0.013													
28–May	0.009		0.014													
29–May	0.011		0.015													
30–May	0.014		0.016													
31–May	0.017		0.018													
01–Jun	0.020		0.020													
02–Jun	0.023		0.022													
03–Jun	0.026		0.025													
04–Jun	0.030		0.027													
05–Jun	0.034		0.030													
06–Jun	0.036		0.032													
07–Jun	0.037		0.035													
08–Jun	0.039		0.038													
09–Jun	0.040		0.040			0.007										
10–Jun	0.041		0.043	0.001	0.045	0.008										
11–Jun	0.041		0.045	0.003	0.046	0.009										
12–Jun	0.042		0.047	0.005	0.048	0.011	0.002	0.037	0.044						0.011	0.000
13–Jun	0.043		0.049	0.007	0.050	0.012	0.003	0.041	0.051						0.026	0.002
14–Jun	0.044		0.051	0.008	0.051	0.013	0.003	0.045	0.062	0.009					0.043	0.004
15–Jun	0.044		0.055	0.010	0.053	0.015	0.004	0.048	0.073	0.014	0.001	0.002	0.002	0.004	0.052	0.007
16–Jun	0.045		0.059	0.011	0.056	0.018	0.004	0.053	0.091	0.018	0.002	0.004	0.009	0.014	0.064	0.010
17–Jun	0.046		0.064	0.013	0.058	0.020	0.005	0.059	0.106	0.021	0.004	0.006	0.015	0.020	0.074	0.014
18–Jun	0.048		0.075	0.015	0.060	0.022	0.005	0.062	0.120	0.025	0.006	0.008	0.019	0.031	0.090	0.017
19–Jun	0.049		0.082	0.027	0.063	0.025	0.006	0.066	0.146	0.028	0.007	0.009	0.026	0.038	0.103	0.020
20–Jun	0.051		0.099	0.035	0.065	0.031	0.007	0.068	0.171	0.032	0.011	0.010	0.033	0.050	0.118	0.025
21–Jun	0.054		0.114	0.040	0.068	0.039	0.007	0.071	0.190	0.038	0.014	0.012	0.044	0.064	0.132	0.029
22–Jun	0.060	0.003	0.133	0.043	0.070	0.048	0.008	0.073	0.198	0.046	0.016	0.014	0.056	0.082	0.143	0.034

– Continued –

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Date	Cumulative Proportion															
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
23-Jun	0.066	0.007	0.162	0.045	0.074	0.058	0.009	0.074	0.201	0.053	0.019	0.015	0.070	0.101	0.154	0.039
24-Jun	0.077	0.009	0.195	0.049	0.076	0.069	0.012	0.075	0.206	0.065	0.021	0.017	0.085	0.125	0.179	0.047
25-Jun	0.093	0.022	0.223	0.053	0.078	0.075	0.015	0.077	0.212	0.077	0.024	0.019	0.096	0.146	0.217	0.058
26-Jun	0.108	0.035	0.261	0.055	0.080	0.080	0.017	0.079	0.218	0.089	0.031	0.022	0.110	0.174	0.257	0.071
27-Jun	0.125	0.051	0.288	0.058	0.082	0.089	0.019	0.082	0.222	0.105	0.037	0.025	0.135	0.215	0.293	0.094
28-Jun	0.153	0.075	0.342	0.061	0.085	0.099	0.022	0.085	0.227	0.133	0.046	0.030	0.171	0.250	0.317	0.129
29-Jun	0.169	0.094	0.389	0.064	0.090	0.111	0.025	0.095	0.238	0.157	0.057	0.037	0.204	0.290	0.330	0.172
30-Jun	0.196	0.136	0.438	0.069	0.110	0.123	0.029	0.121	0.249	0.173	0.074	0.051	0.238	0.323	0.357	0.220
01-Jul	0.229	0.166	0.500	0.078	0.153	0.136	0.035	0.153	0.267	0.184	0.098	0.065	0.259	0.338	0.386	0.250
02-Jul	0.248	0.217	0.512	0.091	0.165	0.150	0.039	0.180	0.297	0.189	0.153	0.076	0.275	0.349	0.419	0.256
03-Jul	0.281	0.250	0.522	0.104	0.188	0.157	0.044	0.198	0.317	0.196	0.178	0.091	0.293	0.372	0.429	0.282
04-Jul	0.325	0.280	0.529	0.115	0.212	0.178	0.056	0.215	0.334	0.224	0.183	0.120	0.338	0.377	0.441	0.322
05-Jul	0.374	0.314	0.534	0.122	0.221	0.217	0.066	0.228	0.357	0.235	0.225	0.158	0.385	0.394	0.459	0.333
06-Jul	0.404	0.338	0.543	0.129	0.231	0.243	0.071	0.245	0.385	0.255	0.277	0.193	0.400	0.414	0.467	0.375
07-Jul	0.458	0.353	0.551	0.136	0.240	0.263	0.078	0.257	0.403	0.306	0.321	0.209	0.406	0.419	0.496	0.437
08-Jul	0.473	0.366	0.562	0.145	0.247	0.304	0.095	0.261	0.422	0.329	0.346	0.235	0.417	0.428	0.537	0.483
09-Jul	0.496	0.379	0.604	0.156	0.263	0.358	0.103	0.269	0.438	0.382	0.378	0.254	0.431	0.439	0.548	0.501
10-Jul	0.509	0.393	0.649	0.164	0.294	0.391	0.114	0.289	0.450	0.457	0.404	0.258	0.450	0.453	0.558	0.535
11-Jul	0.519	0.413	0.677	0.177	0.315	0.411	0.119	0.323	0.456	0.507	0.431	0.267	0.477	0.462	0.571	0.545
12-Jul	0.532	0.421	0.712	0.197	0.344	0.416	0.126	0.337	0.481	0.567	0.488	0.281	0.488	0.522	0.590	0.552
13-Jul	0.550	0.426	0.746	0.217	0.395	0.427	0.148	0.430	0.508	0.600	0.500	0.294	0.490	0.586	0.680	0.565
14-Jul	0.579	0.436	0.797	0.247	0.465	0.445	0.208	0.501	0.520	0.614	0.514	0.303	0.492	0.598	0.707	0.584
15-Jul	0.629	0.464	0.838	0.293	0.514	0.484	0.267	0.513	0.587	0.659	0.532	0.317	0.508	0.608	0.748	0.623
16-Jul	0.643	0.528	0.863	0.358	0.547	0.543	0.382	0.528	0.600	0.676	0.566	0.350	0.523	0.616	0.792	0.636
17-Jul	0.674	0.570	0.877	0.404	0.663	0.590	0.418	0.544	0.608	0.691	0.615	0.498	0.546	0.629	0.804	0.679
18-Jul	0.703	0.609	0.891	0.491	0.759	0.636	0.432	0.562	0.619	0.703	0.629	0.602	0.615	0.645	0.816	0.711
19-Jul	0.730	0.649	0.904	0.577	0.775	0.693	0.436	0.575	0.699	0.723	0.648	0.623	0.649	0.665	0.828	0.732
20-Jul	0.755	0.693	0.922	0.642	0.785	0.739	0.439	0.586	0.731	0.770	0.711	0.664	0.661	0.705	0.839	0.750
21-Jul	0.767	0.715	0.936	0.702	0.804	0.778	0.464	0.601	0.765	0.857	0.747	0.676	0.679	0.725	0.849	0.763
22-Jul	0.781	0.738	0.942	0.744	0.822	0.810	0.551	0.611	0.809	0.921	0.768	0.687	0.710	0.740	0.857	0.771
23-Jul	0.848	0.775	0.947	0.759	0.833	0.832	0.609	0.618	0.851	0.929	0.806	0.706	0.751	0.770	0.877	0.778
24-Jul	0.860	0.788	0.952	0.769	0.842	0.864	0.649	0.627	0.873	0.935	0.816	0.723	0.781	0.844	0.892	0.789
25-Jul	0.875	0.803	0.954	0.784	0.849	0.888	0.683	0.717	0.888	0.939	0.824	0.754	0.813	0.890	0.909	0.799
26-Jul	0.896	0.818	0.957	0.800	0.854	0.910	0.733	0.795	0.897	0.943	0.840	0.776	0.849	0.933	0.921	0.806
27-Jul	0.910	0.830	0.959	0.818	0.858	0.918	0.791	0.806	0.906	0.948	0.850	0.790	0.881	0.962	0.930	0.813
28-Jul	0.930	0.840	0.962	0.836	0.862	0.926	0.826	0.812	0.916	0.953	0.860	0.808	0.914	0.971	0.946	0.826
29-Jul	0.941	0.853	0.963	0.847	0.867	0.933	0.842	0.829	0.925	0.958	0.869	0.836	0.935	0.977	0.958	0.846

- Continued -

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Date	Cumulative Proportion															
	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
30-Jul	0.947	0.864	0.964	0.857	0.874	0.939	0.853	0.888	0.939	0.961	0.877	0.856	0.947	0.983	0.969	0.868
31-Jul	0.954	0.878	0.966	0.866	0.889	0.943	0.865	0.917	0.962	0.965	0.885	0.872	0.956	0.989	0.974	0.892
01-Aug	0.957	0.889	1.000	0.876	1.000	1.000	0.875	1.000	0.975	0.969	0.892	0.885	0.960	0.994	0.979	0.928
02-Aug	0.963	0.900		0.886			0.881		0.982	0.973	0.898	0.901	0.966	1.000	0.987	0.943
03-Aug	0.966	0.906		0.895			0.890		0.986	0.977	0.905	0.916	0.973		0.992	0.952
04-Aug	0.969	0.915		1.000			0.898		0.990	0.983	0.916	0.924	0.978		0.996	0.959
05-Aug	0.980	0.925					0.904		0.994	0.990	0.927	0.933	0.981		1.000	0.966
06-Aug	0.983	0.932					0.909		0.997	0.993	0.943	0.941	0.987			0.972
07-Aug	0.986	0.939					0.917		1.000	0.997	0.958	0.946	0.994			0.977
08-Aug	0.989	0.946					0.927			1.000	0.963	0.953	1.000			0.981
09-Aug	0.991	0.961					0.938				0.969	0.963				0.987
10-Aug	0.994	0.968					0.945				0.976	0.972				0.994
11-Aug	0.998	0.979					0.949				0.982	0.977				1.000
12-Aug	1.000	0.988					1.000				0.986	0.984				
13-Aug		1.000									0.990	0.989				
14-Aug											0.996	0.995				
15-Aug											1.000	1.000				
Midpoint	10-Jul	16-Jul	01-Jul	19-Jul	15-Jul	16-Jul	22-Jul	14-Jul	13-Jul	11-Jul	13-Jul	18-Jul	15-Jul	12-Jul	08-Jul	09-Jul
No. days for 80% ^a	32	34	29	32	33	28	28	32	41	26	33	29	33	34	37	35

^a Proportion for first day (1983–1988) represents that portion of the escapement estimated to have passed the counting site prior to start of counting operations.

^b Proportion for last date (1981–1986) represents that portion of the escapement estimated to have entered the river after termination of counting operations.

^c Inclusive dates: date proportion of escapement reached 10% through date proportion of escapement reached 90%.

Table 15. Daily fish wheel catch by species for the north bank of the Kaslof River, 25 June through 7 August 1994.^a

Date	Hours open	Sockeye		Pink		Coho		Chinook	
		Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
25-Jun	8.0	10	10	0	0	0	0	0	0
26-Jun	7.0	33	43	0	0	0	0	0	0
27-Jun	11.3	73	116	0	0	0	0	0	0
28-Jun	9.0	140	256	1	1	0	0	1	1
29-Jun	9.2	168	424	0	1	0	0	1	2
30-Jun	10.5	66	490	0	1	0	0	2	4
01-Jul	10.3	178	668	1	2	0	0	0	4
02-Jul	10.5	37	705	0	2	0	0	4	8
03-Jul	15.4	114	819	1	3	0	0	3	11
04-Jul	15.3	449	1,268	0	3	0	0	2	13
05-Jul	11.9	66	1,334	0	3	0	0	1	14
06-Jul	6.0	103	1,437	0	3	0	0	3	17
07-Jul	6.0	205	1,642	3	6	0	0	0	17
08-Jul	4.5	242	1,884	2	8	0	0	0	17
09-Jul	9.6	63	1,947	0	8	0	0	0	17
10-Jul	13.0	244	2,191	3	11	0	0	2	19
11-Jul	9.5	45	2,236	3	14	0	0	3	22
12-Jul	12.0	47	2,283	3	17	0	0	1	23
13-Jul	13.3	42	2,325	0	17	0	0	3	26
14-Jul	11.3	63	2,388	0	17	0	0	1	27
15-Jul	9.3	114	2,502	0	17	0	0	1	28
16-Jul	8.6	78	2,580	0	17	0	0	0	28
17-Jul	16.5	268	2,848	1	18	0	0	1	29
18-Jul	5.0	101	2,949	0	18	0	0	0	29
19-Jul	10.5	134	3,083	0	18	0	0	0	29
20-Jul	9.6	80	3,163	0	18	0	0	0	29
21-Jul	11.8	54	3,217	0	18	0	0	1	30
22-Jul	12.8	24	3,241	0	18	0	0	0	30
23-Jul	17.3	11	3,252	0	18	0	0	0	30
24-Jul	24.3	21	3,273	2	20	0	0	2	32
25-Jul	23.5	32	3,305	1	21	0	0	0	32
26-Jul	18.5	2	3,307	0	21	0	0	0	32
27-Jul	32.3	29	3,336	1	22	1	1	3	35
28-Jul	22.5	29	3,365	3	25	0	1	3	38
29-Jul	12.8	14	3,379	0	25	0	1	2	40
30-Jul	9.7	19	3,398	0	25	1	2	2	42
31-Jul	30.5	56	3,454	3	28	1	3	7	49
01-Aug	16.3	27	3,481	2	30	0	3	8	57
02-Aug	18.5	14	3,495	0	30	0	3	0	57
03-Aug	27.7	8	3,503	2	32	0	3	1	58
04-Aug	21.6	5	3,508	4	36	0	3	0	58
05-Aug	25.7	5	3,513	1	37	0	3	0	58
06-Aug	20.9	1	3,514	0	37	0	3	1	59

^a Other species captured: 1 rainbow trout; 9 Dolly Varden char; 1 whitefish.

Table 16. Age composition of sockeye salmon collected in the Kasilof River 1969–1994.

Year	Percentage Composition by Age Class ^{a b}								Sample Size
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	Other	
1969	0.0	14.0	39.0	1.0	0.0	30.0	16.0	0.0	399
1970	tr	2.0	37.0	2.0	0.0	16.0	11.0	2.0	297
1971	0.0	6.0	69.0	0.0	0.0	8.0	16.0	1.0	153
1972	tr	42.0	36.0	1.0	tr	3.0	18.0	0.0	668
1973	0.0	20.0	57.0	0.0	0.0	19.0	4.0	0.0	374
1974	0.0	35.0	59.0	0.0	tr	4.0	2.0	0.0	254
1975	1.0	29.0	7.0	0.0	0.0	58.0	4.0	1.0	931
1976	tr	32.0	20.0	0.0	tr	35.0	12.0	1.0	755
1977	tr	30.0	30.0	0.0	1.0	28.0	11.0	0.0	1,209
1978	0.0	42.0	35.0	0.0	0.0	14.0	9.0	0.0	967
1979	0.0	52.2	37.2	0.0	tr	8.4	1.7	0.5	590
1980	0.0	58.7	27.8	0.0	0.0	8.0	4.5	1.0	988
1981	0.0	30.2	62.2	0.0	0.0	6.0	1.6	0.0	1,479
1982	1.0	34.0	49.5	0.0	0.1	10.7	4.7	0.0	1,518
1983	0.0	48.4	34.3	0.0	0.0	12.8	4.5	0.0	1,997
1984	0.0	50.5	24.8	tr	0.2	17.9	6.6	0.0	2,269
1985	0.2	57.3	21.8	0.1	0.1	17.8	2.6	0.1	3,063
1986	0.0	40.9	42.0	0.3	0.1	11.9	4.6	0.2	1,660
1987		43.4	27.4	0.0	0.1	22.4	6.4	0.3	1,248
1988	0.9	37.5	32.9	0.1	0.1	18.6	10.6	0.2	2,282
1989	0.2	44.0	46.3	0.2	0.0	5.2	4.2	0.0	1,216
1990	0.4	32.9	20.7	0.3	0.0	33.2	12.4	0.3	762
1991	0.0	31.5	33.4	0.1	0.1	29.0	5.8	0.1	2,106
1992	0.0	21.2	27.6	0.0	0.2	35.0	15.9	0.0	1,717
1993	0.4	16.3	29.8	0.0	0.4	28.0	25.2	0.0	571
1994	0.0	26.0	28.3	0.0	0.0	28.6	17.2	0.0	697

^a Percentages weighted by total numbers in the escapement: 1979–1994.

^b 1978–1994 from Waltemyer, ADF&G, Soldotna.

Table 17. Length composition of the major age classes of sockeye salmon collected in the Kaslof River 1980 – 1994. Length measured from mid-eye to fork-of-tail.^a

Year	Age Class	Male			Female			Ratio Male-Female
		Ave Length (mm)	Stdnd Error	Sample Size	Ave Length (mm)	Stdnd Error	Sample Size	
1980	1.2	474	2	189	464	1	376	0.5:1
1981		503	2	241	492	3	146	1.7:1
1982		481	2	285	466	2	235	1.2:1
1983		493	2	113	491	3	78	1.4:1
1984		480	1	544	478	1	428	2.6:1
1985		474	1	723	472	1	897	0.8:1
1986		482	2	266	482	1	368	0.7:1
1987		472	2	282	470	2	257	1.1:1
1988		480	1	353	477	1	480	0.7:1
1989		481	2	245	480	2	290	0.8:1
1990		462	0	139	458	0	91	1.5:1
1991		467	2	326	461	2	305	1.1:1
1992		467	2	184	466	2	212	0.9:1
1993		479	4	40	479	3	53	0.8:1
1994		465	2	90	465	2	91	1.0:1
1980	1.3	531	7	35	516	2	115	0.3:1
1981		566	1	422	558	1	369	1.1:1
1982		549	1	377	542	1	428	0.9:1
1983		558	2	170	547	2	187	0.9:1
1984		539	1	304	533	1	383	0.8:1
1985		531	2	341	527	1	433	0.8:1
1986		550	2	342	543	1	405	0.8:1
1987		553	2	191	552	2	154	1.2:1
1988		550	1	311	543	1	382	0.8:1
1989		550	2	266	542	2	296	0.9:1
1990		518	0	81	523	0	106	0.8:1
1991		531	1	418	518	1	335	1.3:1
1992		536	2	195	527	2	197	1.0:1
1993		550	3	101	542	3	69	1.5:1
1994		538	3	98	530	3	99	1.1:1
1982	2.2	479	3	65	472	3	81	0.8:1
1984		484	2	202	482	1	223	0.9:1
1985		482	2	248	476	1	319	0.8:1
1986		492	4	78	489	2	115	0.7:1
1987		478	2	137	475	2	141	1.0:1
1988		486	2	173	479	1	220	0.8:1
1990		453	0	104	457	0	111	0.9:1
1991		471	2	289	480	11	301	1.0:1
1992		464	2	264	464	1	427	0.6:1
1993		486	3	58	480	2	102	0.7:1
1994		469	2	97	468	2	102	1.0:1
1982	2.3	548	4	41	543	4	40	1.0:1
1984		533	3	102	526	3	80	1.3:1
1988		544	2	104	543	2	115	0.9:1
1990		514	0	63	529	0	61	1.0:1
1991		516	4	61	514	3	64	1.0:1
1992		534	3	112	532	2	122	0.9:1
1993		542	3	66	533	3	78	0.8:1
1994		545	4	49	529	3	71	0.7:1

^a 1980–1994 from Waltemyer, ADF&G, Soldotna.

Table 18. Estimated salmon escapement into the Crescent River 1979–1994.

Date	Sockeye	Pink	Chum	Coho	Chinook	Total
1979	86,654	3,685	95		122	90,556
1980	90,863					90,863
1981	41,213	376			199	41,788
1982	58,957	111				59,068
1983	92,122	221				92,343
1984	118,345		4,880	538		123,763
1985	128,628	984	505	850		130,967
1986	20,385					20,385
1987	120,219	2,044	7,258	552	552	130,625
1988	57,716	85	3,362	245	549	61,957
1989	71,064	354	4,392		151	75,961
1990	52,238	219	7,677	73	21	60,228
1991	44,578	322	6,080	83		51,063
1992	58,241	738	6,892	303	171	66,345
1993	37,556	1,976	1,872		1,619	43,023
1994	30,355	657	2,939	73	7,771 ^a	41,795

^a No counts apportioned to chinook salmon in 1994 (8 chinook salmon were captured in the fish wheel). Counts were apportioned to Dolly Varden char.

Table 19. Estimated salmon escapement into the Crescent River, north and south banks combined, 28 June through 8 August 1994. Species composition based on fish wheel catches.

Date	Sockeye		Pink		Chum		Coho		Dolly Varden	
	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
28-Jun	20	20	0	0	0	0	0	0	1	1
29-Jun	39	59	0	0	0	0	0	0	2	3
30-Jun	185	244	2	2	0	0	0	0	7	10
01-Jul	112	356	1	3	0	0	0	0	5	15
02-Jul	91	447	2	5	0	0	0	0	3	18
03-Jul	67	514	1	6	0	0	0	0	2	20
04-Jul	328	842	5	11	0	0	0	0	13	33
05-Jul	228	1,070	3	14	0	0	0	0	9	42
06-Jul	261	1,331	3	17	0	0	0	0	11	53
07-Jul	507	1,838	7	24	0	0	0	0	21	74
08-Jul	762	2,600	10	34	0	0	0	0	31	105
09-Jul	191	2,791	2	36	0	0	0	0	8	113
10-Jul	336	3,127	4	40	0	0	0	0	14	127
11-Jul	867	3,994	11	51	0	0	0	0	35	162
12-Jul	1,162	5,156	16	67	0	0	0	0	47	209
13-Jul	1,328	6,484	18	85	0	0	0	0	53	262
14-Jul	1,142	7,626	16	101	0	0	0	0	46	308
15-Jul	742	8,368	10	111	0	0	0	0	30	338
16-Jul	582	8,950	13	124	8	8	0	0	72	410
17-Jul	2,234	11,184	48	172	33	41	0	0	275	685
18-Jul	815	11,999	18	190	12	53	0	0	100	785
19-Jul	891	12,890	19	209	13	66	0	0	110	895
20-Jul	852	13,742	14	223	35	101	0	0	176	1,071
21-Jul	212	13,954	4	227	8	109	0	0	44	1,115
22-Jul	826	14,780	14	241	33	142	0	0	171	1,286
23-Jul	1,680	16,460	28	269	69	211	0	0	347	1,633
24-Jul	1,167	17,627	19	288	48	259	0	0	241	1,874
25-Jul	644	18,271	11	299	26	285	0	0	133	2,007
26-Jul	676	18,947	11	310	28	313	0	0	140	2,147
27-Jul	1,227	20,174	21	331	51	364	0	0	253	2,400
28-Jul	947	21,121	8	339	48	412	0	0	417	2,817
29-Jul	932	22,053	8	347	48	460	0	0	410	3,227
30-Jul	1,184	23,237	30	377	66	526	0	0	433	3,660
31-Jul	1,859	25,096	47	424	104	630	0	0	679	4,339
01-Aug	1,479	26,575	50	474	100	730	0	0	263	4,602
02-Aug	1,170	27,745	21	495	124	854	0	0	287	4,889
03-Aug	426	28,171	7	502	104	958	0	0	498	5,387
04-Aug	650	28,821	8	510	217	1,175	0	0	538	5,925
05-Aug	774	29,595	15	525	414	1,589	0	0	516	6,441
06-Aug	252	29,847	45	570	523	2,112	26	26	574	7,015
07-Aug	183	30,030	32	602	380	2,492	19	45	417	7,432
08-Aug	325	30,355	55	657	447	2,939	28	73	339	7,771

Table 20. Daily fish wheel catch by species for the Crescent River, 28 June through 8 August 1994.

Date	Hours open	Sockeye		Pink		Chum		Coho		Chinook		Dolly Varden	
		Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
28-Jun	12.0	0	0	0	0	0	0	0	0	0	0	0	0
29-Jun	12.0	0	0	0	0	0	0	0	0	0	0	0	0
30-Jun	6.5	8	8	0	0	0	0	0	0	0	0	0	0
01-Jul	12.0	3	11	0	0	0	0	0	0	1	1	0	0
02-Jul	12.0	4	15	0	0	0	0	0	0	0	1	0	0
03-Jul	12.0	0	15	0	0	0	0	0	0	0	1	0	0
04-Jul	12.0	0	15	0	0	0	0	0	0	0	1	0	0
05-Jul	24.0	6	21	0	0	0	0	0	0	0	1	0	0
06-Jul	24.0	21	42	0	0	0	0	0	0	0	1	0	0
07-Jul	24.0	30	72	0	0	0	0	0	0	0	1	0	0
08-Jul	24.0	20	92	1	1	0	0	0	0	0	1	0	0
09-Jul	24.0	4	96	0	1	0	0	0	0	0	1	0	0
10-Jul	24.0	6	102	0	1	0	0	0	0	0	1	0	0
11-Jul	24.0	8	110	0	1	0	0	0	0	0	1	0	0
12-Jul	24.0	7	117	0	1	0	0	0	0	0	1	1	1
13-Jul	24.0	12	129	0	1	0	0	0	0	0	1	2	3
14-Jul	24.0	6	135	0	1	0	0	0	0	0	1	2	5
15-Jul	24.0	14	149	1	2	0	0	0	0	0	1	0	5
16-Jul	24.0	21	170	0	2	0	0	0	0	0	1	4	9
17-Jul	24.0	49	219	1	3	2	2	0	0	1	2	7	16
18-Jul	24.0	44	263	0	3	0	2	0	0	1	3	5	21
19-Jul	24.0	24	287	2	5	0	2	0	0	0	3	1	22
20-Jul	24.0	32	319	0	5	0	2	0	0	0	3	6	28
21-Jul	24.0	16	335	0	5	0	2	0	0	0	3	4	32
22-Jul	24.0	8	343	0	5	0	2	0	0	0	3	1	33
23-Jul	24.0	9	352	0	5	0	2	0	0	0	3	1	34
24-Jul	24.0	4	356	0	5	0	2	0	0	0	3	0	34
25-Jul	24.0	14	370	0	5	2	4	0	0	0	3	2	36
26-Jul	24.0	14	384	0	5	0	4	0	0	0	3	6	42
27-Jul	24.0	24	408	2	7	3	7	0	0	0	3	5	47
28-Jul	24.0	60	468	1	8	3	10	0	0	1	4	18	65
29-Jul	24.0	58	526	0	8	3	13	0	0	0	4	34	99
30-Jul	24.0	58	584	2	10	1	14	0	0	1	5	27	126
31-Jul	24.0	139	723	3	13	10	24	0	0	0	5	45	171
01-Aug	24.0	118	841	4	17	8	32	0	0	0	5	21	192
02-Aug	24.0	114	955	2	19	12	44	0	0	0	5	28	220
03-Aug	24.0	65	1,020	1	20	16	60	0	0	0	5	76	296
04-Aug	24.0	87	1,107	1	21	29	89	0	0	2	7	72	368
05-Aug	24.0	99	1,206	2	23	53	142	0	0	1	8	66	434
06-Aug	24.0	21	1,227	5	28	37	179	1	1	0	8	65	499
07-Aug	24.0	18	1,245	2	30	44	223	3	4	0	8	24	523
08-Aug	24.0	24	1,269	4	34	33	256	2	6	0	8	25	548

Table 21. Cumulative proportion by date of sockeye salmon counts recorded in the Crescent River 1984 – 1994.

Date	Cumulative Proportion ^a										
	1984	1985	1986 ^b	1987	1988	1989	1990	1991	1992	1993	1994
15-Jun	0.000	0.000									
16-Jun	0.001	0.000									
17-Jun	0.002	0.000									
18-Jun	0.003	0.000									
19-Jun	0.003	0.000									
20-Jun	0.005	0.001									
21-Jun	0.008	0.001									
22-Jun	0.012	0.001									
23-Jun	0.017	0.001									
24-Jun	0.020	0.001									
25-Jun	0.024	0.001	0.000							0.010	
26-Jun	0.027	0.001	0.000				0.003	0.002		0.019	
27-Jun	0.036	0.002	0.000				0.007	0.004		0.022	
28-Jun	0.041	0.002	0.001				0.013	0.006		0.031	0.001
29-Jun	0.049	0.005	0.005				0.021	0.010		0.034	0.002
30-Jun	0.069	0.007	0.008				0.025	0.013		0.038	0.008
01-Jul	0.081	0.008	0.017	0.012	0.008	0.008	0.034	0.017	0.045	0.056	0.012
02-Jul	0.100	0.012	0.031	0.016	0.038	0.020	0.055	0.031	0.072	0.061	0.015
03-Jul	0.118	0.016	0.054	0.020	0.149	0.043	0.065	0.033	0.096	0.077	0.017
04-Jul	0.140	0.057	0.077	0.023	0.223	0.096	0.077	0.040	0.115	0.183	0.028
05-Jul	0.156	0.138	0.084	0.027	0.269	0.129	0.098	0.061	0.138	0.239	0.035
06-Jul	0.170	0.188	0.084	0.058	0.338	0.181	0.128	0.063	0.153	0.246	0.044
07-Jul	0.184	0.196	0.110	0.084	0.404	0.231	0.141	0.064	0.159	0.258	0.061
08-Jul	0.225	0.226	0.126	0.112	0.488	0.293	0.155	0.079	0.173	0.273	0.086
09-Jul	0.268	0.251	0.134	0.160	0.554	0.334	0.184	0.090	0.192	0.297	0.092
10-Jul	0.322	0.274	0.144	0.193	0.581	0.369	0.207	0.092	0.212	0.314	0.103
11-Jul	0.360	0.293	0.154	0.243	0.598	0.412	0.264	0.100	0.243	0.353	0.132
12-Jul	0.387	0.319	0.165	0.269	0.625	0.463	0.286	0.131	0.292	0.386	0.170
13-Jul	0.409	0.364	0.184	0.305	0.655	0.502	0.299	0.143	0.335	0.423	0.214
14-Jul	0.425	0.388	0.197	0.333	0.688	0.502	0.321	0.188	0.379	0.501	0.251
15-Jul	0.454	0.415	0.204	0.370	0.692	0.518	0.345	0.245	0.424	0.580	0.276
16-Jul	0.499	0.445	0.213	0.386	0.697	0.611	0.393	0.292	0.463	0.642	0.295
17-Jul	0.548	0.480		0.406	0.717	0.674	0.472	0.355	0.512	0.685	0.368
18-Jul	0.599	0.506		0.448	0.748	0.691	0.540	0.425	0.539	0.723	0.395
19-Jul	0.639	0.525		0.513	0.771	0.710	0.574	0.461	0.573	0.752	0.425
20-Jul	0.684	0.546		0.548	0.781	0.750	0.610	0.497	0.610	0.772	0.453
21-Jul	0.721	0.573		0.593	0.808	0.776	0.653	0.524	0.653	0.797	0.460
22-Jul	0.743	0.596		0.671	0.828	0.804	0.705	0.582	0.701	0.821	0.487
23-Jul	0.783	0.632		0.773	0.853	0.829	0.742	0.649	0.772	0.845	0.542
24-Jul	0.802	0.665		0.819	0.885	0.855	0.762	0.688	0.831	0.865	0.581
25-Jul	0.813	0.698		0.856	0.917	0.884	0.801	0.718	0.877	0.883	0.602
26-Jul	0.824	0.729		0.877	0.941	0.907	0.839	0.753	0.898	0.908	0.624
27-Jul	0.838	0.756		0.893	0.959	0.930	0.864	0.801	0.912	0.925	0.665
28-Jul	0.852	0.775		0.905	0.965	0.958	0.880	0.836	0.928	0.942	0.696
29-Jul	0.870	0.794		0.915	0.976	0.968	0.896	0.866	0.948	0.953	0.727
30-Jul	0.882	0.821		0.920	0.989	0.978	0.933	0.885	0.960	0.969	0.766
31-Jul	0.893	1.000		0.938	1.000	0.994	0.956	0.916	0.974	0.981	0.827
01-Aug	1.000			0.960		1.000	0.973	0.966	0.987	0.990	0.875

– Continued –

FN: 94CRCUM%.WK3

Table 21. (p. 2 of 2)

Date	Cumulative Proportion ^a										
	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
02-Aug				0.975			0.986	0.978	1.000	1.000	0.914
03-Aug				0.985			0.993	0.984			0.928
04-Aug				0.994			1.000	0.987			0.949
05-Aug				0.996				0.992			0.975
06-Aug				1.000				0.996			0.983
07-Aug								1.000			0.989
08-Aug											1.000
Midpoint	17-Jul	18-Jul		19-Jul	09-Jul	15-Jul	18-Jul	21-Jul	17-Jul	14-Jul	23-Jul
No. days for 80% ^c	31+	26+		21	23	22	25	21	23	23	24

^a Proportion accrued on last day (1984-1986, 1988) represents that portion of the escapement estimated to have entered the river after termination of counting operations.

^b Enumeration activities terminated on 16 July 1986. Estimated proportions from King and Tarbox (1988).

^c Inclusive dates: date proportion of escapement reached 10% through date proportion of escapement reached 90%.

Table 22. Age composition of sockeye salmon collected in the Crescent River 1979–1994.

Year	Percentage Composition by Age Class ^{a b}								Sample Size
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	Other	
1979	tr	27.8	70.1	0.0	0.0	tr	tr	tr	643
1980	0.0	6.5	86.9	0.0	0.0	2.9	1.6	2.1	511
1981	0.0	8.2	32.1	0.0	0.0	9.6	49.9	tr	1,117
1982	0.0	12.9	79.2	0.1	0.0	0.8	7.0	0.0	711
1983	0.0	10.9	42.2	0.2	0.7	27.4	18.6	0.0	731
1984	0.0	3.5	16.9	0.0	0.0	20.0	59.4	tr	780
1985	0.2	4.7	31.3	0.0	0.3	20.5	43.0	0.0	594
1986	0.0	6.5	15.8	0.0	0.0	13.0	64.0	0.7	139
1987	0.0	2.6	47.7	0.0	0.0	4.2	45.0	0.5	191
1988	0.0	10.4	44.9	0.5	0.1	17.8	26.1	0.1	741
1989	0.0	2.6	84.2	0.6	0.0	0.6	15.0	0.1	728
1990	0.0	3.7	48.5	0.4	0.1	3.5	43.2	0.5	591
1991	0.0	14.9	50.4	0.3	0.0	16.8	16.5	1.1	357
1992	0.0	2.6	21.7	0.0	0.0	12.4	61.9	1.6	194
1993	0.2	8.8	37.2	0.0	0.9	5.8	46.9	0.2	465
1994	0.2	6.6	49.6	0.4	0.4	12.3	30.5	0.2	547

^a Percentages weighted by total numbers in the escapement: 1979–1981, 1986–1994.

^b 1979–1994 from Waltemyer, ADF&G, Soldotna.

Table 23. Length composition of the major age classes of sockeye salmon collected in the Crescent River 1980 – 1994. Length measured from mid-eye to fork-of--tail. ^a

Year	Age Class	Male			Female			Ratio Male-Female
		Ave Length (mm)	Stdnd Error	Sample Size	Ave Length (mm)	Stdnd Error	Sample Size	
1980	1.2	472	6	47	471	7	31	1.5:1
1981		522	9	59	491	9	33	1.8:1
1982		467	6	47	487	7	25	1.9:1
1991		517	6	36	490	8	17	2.1:0
1980	1.3	568	2	167	549	2	223	0.7:1
1981		576	3	121	555	3	172	0.7:1
1982		586	1	303	566	1	259	1.2:1
1983		570	2	111	542	2	169	0.7:1
1984		574	5	60	552	2	72	0.8:1
1985		565	4	75	551	2	111	0.7:1
1987		601	3	54	573	3	37	1.5:1
1988		581	2	195	550	2	138	1.4:1
1989		593	1	320	561	2	271	1.2:1
1990		592	3	184	571	0	120	1.5:1
1991		560	3	105	543	3	75	1.4:1
1992		555	9	24	535	5	18	1.3:1
1993		578	3	81	559	2	92	0.9:1
1994		563	2	124	547	2	147	0.8:1
1981	2.2	487	6	40	519	5	57	0.7:1
1983		494	4	93	488	3	89	1.0:1
1984		499	4	81	507	4	75	1.1:1
1985		496	5	75	490	4	47	1.6:1
1988		487	5	72	496	4	60	1.2:1
1991		515	5	42	498	6	18	2.3:1
1992		486	12	10	492	5	14	0.7:1
1994		466	4	54	481	6	13	4.2:1
1980	2.3	584	2	158	554	2	237	0.7:1
1983		569	4	43	550	2	80	0.5:1
1984		581	2	261	553	2	202	1.3:1
1985		568	4	94	551	2	161	0.6:1
1986		573	5	44	556	3	45	1.0:1
1987		595	4	49	573	3	37	1.3:1
1988		585	3	110	556	2	83	1.3:1
1989		594	3	72	568	3	37	1.9:1
1990		601	0	165	571	0	72	2.3:1
1991		558	4	36	537	4	23	1.6:1
1992		572	4	58	547	3	62	0.9:1
1993		585	2	104	558	2	114	0.9:1
1994		570	2	86	549	3	81	1.1:1

^a 1980–1994 from Waltemyer, ADF&G, Soldotna.

Table 24. Estimated salmon escapement into the Yentna River 1981–1994.

Date	Sockeye	Pink	Chum	Coho	Chinook	Total
1981	139,401	36,054	19,765	17,017	9	212,246
1982	113,847	447,167	27,830	34,089		622,933
1983	104,414	60,661	10,802	8,867		184,744
1984	149,375	369,299	26,508	18,172		563,354
1985	107,124	120,990	12,092	9,181	404	249,791
1986	92,076	673,901	56,656	23,457	1,112	847,202
1987	66,054	84,099	17,859	6,279	407	174,698
1988	52,330	137,027	49,074	12,173	444	251,048
1989	96,269	173,698	63,379	25,695	393	359,434
1990	140,290	244,569	33,566	21,346	607	440,378
1991	109,632	75,377	21,655	57,275	204	264,143
1992	66,083	239,378	30,062	29,073	107	364,703
1993	141,694	227,171	28,021	37,752	363	435,001
1994	128,032	79,178	18,971	25,173	226	251,580

Table 25. Estimated salmon escapement into the Yentna River, 7 July through 12 August 1994. Species composition of daily sonar counts based on fish wheel catches.

Date	Sockeye		Pink		Chum		Coho		Chinook	
	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
07-Jul	271	271	37	37	54	54	85	85	8	8
08-Jul	297	568	42	79	59	113	93	178	9	17
09-Jul	434	1,002	54	133	83	196	135	313	12	29
10-Jul	281	1,283	26	159	50	246	83	396	7	36
11-Jul	358	1,641	43	202	69	315	110	506	10	46
12-Jul	465	2,106	137	339	122	437	139	645	16	62
13-Jul	405	2,511	124	463	108	545	124	769	15	77
14-Jul	268	2,779	88	551	74	619	86	855	11	88
15-Jul	240	3,019	77	628	64	683	75	930	9	97
16-Jul	287	3,306	252	880	202	885	176	1,106	11	108
17-Jul	392	3,698	556	1,436	378	1,263	267	1,373	4	112
18-Jul	3,477	7,175	2,425	3,861	790	2,053	998	2,371	13	125
19-Jul	7,516	14,691	3,648	7,509	474	2,527	1,400	3,771	0	125
20-Jul	6,636	21,327	3,476	10,985	266	2,793	1,216	4,987	22	147
21-Jul	10,617	31,944	5,642	16,627	603	3,396	1,893	6,880	0	147
22-Jul	6,110	38,054	6,556	23,183	535	3,931	502	7,382	5	152
23-Jul	4,567	42,621	4,829	28,012	340	4,271	412	7,794	0	152
24-Jul	8,263	50,884	8,979	36,991	969	5,240	1,590	9,384	0	152
25-Jul	8,298	59,182	6,419	43,410	898	6,138	1,416	10,800	36	188
26-Jul	7,044	66,226	6,347	49,757	857	6,995	1,370	12,170	0	188
27-Jul	5,027	71,253	5,094	54,851	897	7,892	1,556	13,726	14	202
28-Jul	5,471	76,724	3,839	58,690	657	8,549	1,732	15,458	16	218
29-Jul	8,014	84,738	4,340	63,030	1,014	9,563	1,711	17,169	0	218
30-Jul	6,456	91,194	4,551	67,581	1,217	10,780	1,945	19,114	0	218
31-Jul	4,809	96,003	4,138	71,719	1,278	12,058	1,253	20,367	0	218
01-Aug	4,844	100,847	2,432	74,151	779	12,837	934	21,301	0	218
02-Aug	5,451	106,298	1,707	75,858	671	13,508	778	22,079	3	221
03-Aug	4,091	110,389	914	76,772	630	14,138	484	22,563	0	221
04-Aug	3,408	113,797	646	77,418	471	14,609	251	22,814	5	226
05-Aug	3,887	117,684	589	78,007	505	15,114	297	23,111	0	226
06-Aug	2,950	120,634	471	78,478	675	15,789	298	23,409	0	226
07-Aug	2,582	123,216	295	78,773	943	16,732	315	23,724	0	226
08-Aug	1,477	124,693	166	78,939	772	17,504	304	24,028	0	226
09-Aug	1,267	125,960	92	79,031	414	17,918	329	24,357	0	226
10-Aug	1,073	127,033	123	79,154	606	18,524	434	24,791	0	226
11-Aug	484	127,517	12	79,166	217	18,741	185	24,976	0	226
12-Aug	515	128,032	12	79,178	230	18,971	197	25,173	0	226

Table 26. Salmon escapement observations in selected Susitna River tributaries 1994.

	Method	Source	Number of Fish Observed or Estimated				
			Sockeye	Pink	Chum	Coho	Chinook
Chelatna Lake	Weir	a	28,303				
Deception Creek	Aerial	b					766
Rabideux Creek	Ground	b				105	
Birch Creek	Ground	b				224	
Question Creek	Ground	b				339	
Answer Creek	Ground	b				0	
Goose Creek	Aerial	b					375
Little Willow Creek	Aerial	b					712
Montana Creek	Aerial	b					1,143
Prairie Creek	Aerial	b					2,254
Sheep Creek	Aerial	b					524
Willow Creek	Aerial	b					2,245
Alexander Creek	Aerial	b					1,514
Deshka River	Aerial	b					2,665
Peters Creek	Aerial	b					490
Lake Creek	Aerial	b					1,898
Cache Creek	Aerial	b					628
Talachulitna River	Aerial	b					1,575

^a Cook Inlet Aquaculture Association records, Soldotna.

^b Sport Fish Division records, Alaska Department of Fish and Game, Palmer.

Table 27. Cumulative proportion by date of sockeye salmon counts recorded in the Yentna River 1981–1994.

Date	Cumulative Proportion ^a													
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
27–Jun		0.000												
28–Jun		0.000												
29–Jun	0.001	0.000				0.001								
30–Jun	0.004	0.000	0.000			0.002								
01–Jul	0.008	0.001	0.001	0.001	0.000	0.002	0.000							
02–Jul	0.013	0.001	0.001	0.001	0.001	0.003	0.001							
03–Jul	0.016	0.001	0.002	0.002	0.001	0.003	0.001							
04–Jul	0.017	0.002	0.003	0.003	0.001	0.004	0.002							
05–Jul	0.018	0.002	0.003	0.004	0.001	0.005	0.002							
06–Jul	0.020	0.002	0.004	0.004	0.002	0.005	0.003							
07–Jul	0.021	0.002	0.004	0.005	0.003	0.006	0.003	0.004	0.003	0.002	0.000	0.002	0.001	0.002
08–Jul	0.023	0.002	0.004	0.005	0.003	0.006	0.004	0.008	0.006	0.005	0.001	0.003	0.002	0.004
09–Jul	0.026	0.002	0.005	0.006	0.004	0.007	0.004	0.012	0.009	0.008	0.001	0.005	0.004	0.008
10–Jul	0.056	0.002	0.005	0.007	0.005	0.008	0.005	0.016	0.012	0.010	0.002	0.007	0.005	0.010
11–Jul	0.092	0.003	0.006	0.009	0.006	0.009	0.005	0.019	0.014	0.013	0.002	0.008	0.006	0.013
12–Jul	0.155	0.003	0.008	0.011	0.007	0.010	0.005	0.022	0.015	0.014	0.002	0.010	0.007	0.016
13–Jul	0.230	0.003	0.011	0.012	0.008	0.011	0.006	0.025	0.016	0.016	0.003	0.012	0.008	0.020
14–Jul	0.344	0.003	0.034	0.015	0.009	0.011	0.007	0.029	0.019	0.017	0.003	0.016	0.009	0.022
15–Jul	0.454	0.004	0.059	0.017	0.010	0.014	0.008	0.034	0.023	0.019	0.004	0.022	0.014	0.024
16–Jul	0.521	0.005	0.096	0.023	0.010	0.022	0.010	0.039	0.026	0.020	0.005	0.035	0.134	0.026
17–Jul	0.563	0.016	0.131	0.142	0.011	0.027	0.014	0.043	0.051	0.022	0.005	0.062	0.284	0.029
18–Jul	0.599	0.043	0.179	0.232	0.012	0.036	0.020	0.046	0.103	0.025	0.009	0.086	0.360	0.056
19–Jul	0.638	0.155	0.351	0.345	0.013	0.041	0.027	0.090	0.161	0.105	0.028	0.120	0.382	0.115
20–Jul	0.681	0.329	0.567	0.458	0.014	0.042	0.034	0.197	0.202	0.217	0.100	0.148	0.420	0.167
21–Jul	0.732	0.527	0.693	0.554	0.014	0.043	0.047	0.269	0.234	0.284	0.193	0.184	0.464	0.250
22–Jul	0.801	0.627	0.722	0.626	0.016	0.052	0.059	0.303	0.280	0.327	0.302	0.229	0.513	0.297
23–Jul	0.846	0.665	0.758	0.681	0.019	0.162	0.107	0.375	0.359	0.383	0.378	0.296	0.574	0.333
24–Jul	0.882	0.711	0.786	0.755	0.145	0.193	0.218	0.484	0.453	0.452	0.425	0.373	0.647	0.397
25–Jul	0.905	0.734	0.824	0.785	0.359	0.253	0.331	0.630	0.532	0.505	0.451	0.447	0.709	0.426
26–Jul	0.925	0.780	0.867	0.808	0.507	0.371	0.442	0.771	0.646	0.573	0.505	0.519	0.763	0.517
27–Jul	0.940	0.811	0.894	0.836	0.636	0.491	0.528	0.821	0.749	0.667	0.575	0.606	0.810	0.557
28–Jul	0.950	0.831	0.905	0.855	0.782	0.606	0.587	0.858	0.799	0.734	0.637	0.674	0.831	0.599
29–Jul	0.958	0.847	0.913	0.866	0.903	0.752	0.625	0.886	0.854	0.769	0.674	0.734	0.857	0.662
30–Jul	0.969	0.859	0.921	0.874	0.942	0.831	0.655	0.916	0.864	0.796	0.720	0.794	0.893	0.712
31–Jul	0.976	0.890	0.925	0.885	0.960	0.861	0.686	0.937	0.868	0.825	0.754	0.825	0.927	0.750
01–Aug	0.980	0.933	0.929	0.893	0.970	0.882	0.709	0.946	0.873	0.859	0.779	0.858	0.938	0.788
02–Aug	0.986	0.948	0.937	0.901	0.978	0.908	0.750	0.960	0.879	0.907	0.806	0.881	0.950	0.830
03–Aug	0.988	0.955	0.941	0.909	0.983	0.917	0.789	0.969	0.889	0.947	0.850	0.896	0.967	0.862
04–Aug	0.990	0.962	0.945	0.920	0.987	0.924	0.825	0.975	0.907	0.962	0.891	0.910	0.985	0.889
05–Aug	0.991	0.965	0.949	0.926	0.990	0.935	0.857	0.981	0.923	0.971	0.930	0.915	0.992	0.919
06–Aug	0.992	0.967	0.953	0.934	0.994	0.940	0.875	0.984	0.936	0.978	0.942	0.922	0.996	0.942
07–Aug	0.992	0.970	0.955	0.939	0.997	1.000	0.889	0.989	0.944	0.985	0.959	0.929	1.000	0.962
08–Aug	0.992	0.972	0.958	0.944	1.000		0.900	0.992	0.949	0.990	0.975	0.941		0.974
09–Aug	0.993	0.975	0.959	0.949			0.932	0.994	0.954	0.994	0.986	0.966		0.984
10–Aug	0.994	0.977	0.959	0.954			0.962	0.996	0.958	0.995	0.994	0.984		0.992
11–Aug	0.995	0.979	0.962	0.958			0.986	1.000	0.962	0.998	0.999	1.000		0.996
12–Aug	0.996	0.981	0.968	0.962			0.996		0.966	1.000	1.000			1.000
13–Aug	0.997	0.982	0.974	0.965				1.000		0.975				
14–Aug	0.997	0.984	0.977	0.968						0.985				
15–Aug	0.998	0.985	0.979	0.970						0.992				
16–Aug	0.998	0.986	0.982	0.973						0.995				
17–Aug	0.998	0.987	0.985	0.975						0.997				
18–Aug	0.998	0.988	0.987	0.977						0.998				
19–Aug	0.998	0.989	0.988	0.979						0.999				
20–Aug	0.999	0.990	0.990	0.980						1.000				
21–Aug	0.999	0.990	0.991	0.981										
22–Aug	0.999	0.990	0.992	0.984										
23–Aug	0.999	0.991	0.993	0.987										
24–Aug	1.000	0.992	0.994	0.989										
25–Aug	1.000	0.993	0.994	0.992										
26–Aug	1.000	0.994	0.995	0.994										

Table 27. (p. 2 of 2)

Date	Cumulative Proportion ^a													
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
27-Aug	1.000	0.994	0.996	0.996										
28-Aug	1.000	0.995	0.997	0.996										
29-Aug	1.000	0.996	0.998	0.998										
30-Aug		0.997	0.998	0.999										
31-Aug		0.997	0.999	0.999										
01-Sep		0.998	0.999	1.000										
02-Sep		0.999	0.999	1.000										
03-Sep		0.999	0.999	1.000										
04-Sep		1.000	1.000	1.000										
05-Sep		1.000	1.000	1.000										
Midpoint	16-Jul	21-Jul	20-Jul	21-Jul	26-Jul	28-Jul	27-Jul	25-Jul	25-Jul	25-Jul	26-Jul	26-Jul	22-Jul	26-Jul
No. days for 80% ^b	14	14	12	17	6	11	17	11	18	15	17	17	16	19

^a Proportion accrued on last day (1986) represents that portion of the escapement estimated after enumeration operations.

^b Inclusive dates: date proportion of escapement reached 10% through date proportion of escapement reached 90%.

Table 28. Daily adjusted fish wheel catch by species for the north bank of the Yentna River, 7 July through 10 August 1994.^a

Date	Hours open	Sockeye		Pink		Chum		Coho		Chinook	
		Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
07-Jul	22.0	5	5	3	3	1	1	0	0	0	0
08-Jul	24.0	2	7	3	6	2	3	2	2	1	1
09-Jul	23.5	2	9	1	7	2	5	7	9	0	1
10-Jul	23.5	2	11	0	7	0	5	0	9	0	1
11-Jul	24.1	8	19	0	7	3	8	1	10	0	1
12-Jul	19.5	2	21	0	7	2	10	2	12	2	3
13-Jul	33.0	19	40	2	9	6	16	5	17	1	4
14-Jul	12.0	6	46	8	17	2	18	0	17	0	4
15-Jul	23.0	8	54	4	21	2	20	2	19	0	4
16-Jul	25.0	8	62	13	34	3	23	10	29	1	5
17-Jul	23.0	16	78	27	61	19	42	8	37	0	5
18-Jul	35.1	35	113	125	186	44	86	20	57	1	6
19-Jul	12.1	44	157	309	495	30	116	20	77	0	6
20-Jul	10.6	66	223	376	871	20	136	29	106	2	8
21-Jul	13.7	16	239	181	1,052	18	154	12	118	0	8
22-Jul	6.9	52	291	299	1,351	35	189	14	132	3	11
23-Jul	9.4	69	360	386	1,737	38	227	13	145	0	11
24-Jul	6.3	211	571	887	2,624	54	281	27	172	0	11
25-Jul	4.0	276	847	522	3,146	48	329	48	220	0	11
26-Jul	7.3	553	1,400	973	4,119	93	422	96	316	0	11
27-Jul	5.4	293	1,693	698	4,817	107	529	62	378	0	11
28-Jul	6.3	334	2,027	396	5,213	84	613	127	505	0	11
29-Jul	5.7	371	2,398	417	5,630	118	731	46	551	0	11
30-Jul	4.4	235	2,633	295	5,925	120	851	71	622	0	11
31-Jul	9.0	176	2,809	325	6,250	80	931	77	699	0	11
01-Aug	6.9	150	2,959	167	6,417	70	1,001	80	779	0	11
02-Aug	10.0	194	3,153	151	6,568	86	1,087	46	825	2	13
03-Aug	9.7	109	3,262	94	6,662	57	1,144	32	857	0	13
04-Aug	9.7	161	3,423	82	6,744	40	1,184	12	869	0	13
05-Aug	9.2	263	3,686	89	6,833	89	1,273	31	900	0	13
06-Aug	9.6	123	3,809	30	6,863	95	1,368	23	923	0	13
07-Aug	9.9	97	3,906	29	6,892	155	1,523	12	935	0	13
08-Aug	11.7	51	3,957	14	6,906	84	1,607	16	951	0	13
09-Aug	12.8	98	4,055	9	6,915	101	1,708	24	975	0	13
10-Aug	14.0	38	4,093	12	6,927	115	1,823	36	1,011	0	13

^a Fish wheel catch adjusted for 24 h: (daily catch • 24 h) / hours open. Total catch by species: 1,374 sockeye salmon; 2,309 pink salmon; 734 chum salmon; 379 coho salmon; 10 chinook salmon.

Table 29. Daily adjusted fish wheel catch by species for the south bank of the Yentna River, 7 July through 12 August 1994.^a

Date	Hours open	Sockeye		Pink		Chum		Coho		Chinook	
		Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
07-Jul	23.2	17	17	0	0	2	2	3	3	1	1
08-Jul	23.5	13	30	0	0	1	3	4	7	1	2
09-Jul	23.5	19	49	1	1	2	5	12	19	0	2
10-Jul	23.7	26	75	4	5	2	7	5	24	0	2
11-Jul	23.7	25	100	0	5	9	16	4	28	0	2
12-Jul	24.0	33	133	2	7	6	22	8	36	0	2
13-Jul	24.0	28	161	1	8	10	32	7	43	1	3
14-Jul	24.0	23	184	8	16	5	37	7	50	2	5
15-Jul	24.0	27	211	17	33	6	43	8	58	0	5
16-Jul	23.5	29	240	42	75	33	76	27	85	1	6
17-Jul	23.3	70	310	65	140	57	133	43	128	0	6
18-Jul	21.7	363	673	207	347	62	195	99	227	1	7
19-Jul	17.8	656	1,329	241	588	34	229	119	346	0	7
20-Jul	13.3	720	2,049	299	887	25	254	128	474	2	9
21-Jul	11.7	772	2,821	361	1,248	39	293	135	609	0	9
22-Jul	11.3	664	3,485	672	1,920	53	346	53	662	0	9
23-Jul	13.6	681	4,166	656	2,576	44	390	60	722	0	9
24-Jul	12.1	568	4,734	536	3,112	63	453	111	833	0	9
25-Jul	15.1	411	5,145	259	3,371	41	494	70	903	2	11
26-Jul	11.5	634	5,779	460	3,831	71	565	126	1,029	0	11
27-Jul	11.8	631	6,410	517	4,348	96	661	204	1,233	2	13
28-Jul	12.1	592	7,002	367	4,715	58	719	181	1,414	2	15
29-Jul	10.6	912	7,914	414	5,129	89	808	207	1,621	0	15
30-Jul	10.6	837	8,751	522	5,651	118	926	252	1,873	0	15
31-Jul	10.8	490	9,241	368	6,019	120	1,046	118	1,991	0	15
01-Aug	11.0	587	9,828	264	6,283	79	1,125	96	2,087	0	15
02-Aug	13.3	632	10,460	182	6,465	67	1,192	87	2,174	0	15
03-Aug	14.0	505	10,965	103	6,568	72	1,264	57	2,231	0	15
04-Aug	17.1	599	11,564	96	6,664	77	1,341	44	2,275	1	16
05-Aug	19.1	634	12,198	76	6,740	60	1,401	44	2,319	0	16
06-Aug	17.9	578	12,776	89	6,829	111	1,512	55	2,374	0	16
07-Aug	19.1	410	13,186	43	6,872	124	1,636	50	2,424	0	16
08-Aug	19.6	262	13,448	28	6,900	127	1,763	53	2,477	0	16
09-Aug	19.4	199	13,647	14	6,914	49	1,812	52	2,529	0	16
10-Aug	21.8	160	13,807	17	6,931	74	1,886	61	2,590	0	16
11-Aug	21.7	66	13,873	1	6,932	33	1,919	30	2,620	0	16
12-Aug	13.0	57	13,930	2	6,934	22	1,941	17	2,637	0	16

^a Fish wheel catch adjusted for 24 h: (daily catch * 24 h) / hours open. Total catch by species: 8,251 sockeye salmon; 3,763 pink salmon; 1,260 chum salmon; 1,153 coho salmon; 12 chinook salmon.

Table 30. Age composition of sockeye salmon collected in the Yentna River 1986–1994.

Year	Percentage Composition by Age Class ^{a b}											Sample Size
	0.2	0.3	1.1	1.2	1.3	1.4	2.1	2.2	2.3	2.4	3.2	
1986	0.0	2.1	1.9	22.7	56.5	0.2	0.6	5.9	10.0	0.1		492
1987	1.3	2.4	0.9	23.3	50.6	1.0	0.0	8.6	11.7	0.0		1,089
1988	2.7	2.4	0.4	33.5	41.9	0.2	1.7	6.5	10.4	0.1		1,727
1989	0.2	0.2	1.3	27.2	63.5	0.4	0.2	3.0	4.0	0.0		1,362
1990	0.8	2.4	0.3	29.9	47.6	0.7	0.1	9.8	8.2	0.1		1,710
1991	2.0	10.1	0.1	25.2	44.1	0.1	0.1	7.0	11.1	0.1		1,509
1992	1.6	0.6	1.0	31.1	29.6	0.1	0.4	16.9	18.3	0.1	0.4	1,451
1993	1.0	4.6	0.1	32.1	35.5	0.0	0.4	11.7	14.5	0.1	0.0	1,390
1994	1.3	3.9	0.6	23.2	43.2	0.2	0.0	9.7	17.6	0.0	0.0	637

^a Percentages weighted by total numbers in the escapement: 1979–1981, 1986–1994.^b 1986–1994 from Waltemyer, ADF&G, Soldotna.

Table 31. Length composition of the major age classes of sockeye salmon collected in the Yentna River 1986 – 1994. Length measured from mid-eye to fork – of – tail.^a

Year	Age Class	Male			Female			Ratio Male-Female
		Ave Length (mm)	Std'd Error	Sample Size	Ave Length (mm)	Std'd Error	Sample Size	
1991	0.3	572	5	59	550	2	100	0.6:1
1986	1.2	455	3	104	472	5	52	2.0:1
1987		484	3	158	477	2	156	1.0:1
1988		461	2	408	486	3	170	2.4:1
1989		463	4	246	485	4	122	2.0:1
1990		446	0	305	446	0	238	1.3:1
1991		460	3	253	484	2	130	2.0:1
1992		443	2	360	469	3	115	3.1:1
1993		465	2	279	494	2	167	1.7:1
1994		468	3	107	484	5	41	2.6:1
1986	1.3	579	3	172	563	2	216	0.8:1
1987		591	2	246	565	2	222	1.1:1
1988		580	2	365	552	1	359	1.0:1
1989		575	3	390	553	1	474	0.8:1
1990		573	0	400	552	0	526	0.7:1
1991		562	2	301	542	1	356	0.9:1
1992		546	4	188	543	2	242	0.8:1
1993		561	2	288	549	1	266	0.9:1
1994		596	3	133	561	2	142	0.9:1
1992	2.2	451	3	181	471	6	53	3.4:1
1993		476	4	93	487	3	69	1.3:1
1986	2.3	588	5	25	555	4	44	0.6:1
1987		583	4	62	566	3	52	1.2:1
1988		585	4	92	554	3	87	1.1:1
1990		574	0	73	542	0	96	0.8:1
1991		561	4	78	536	3	86	0.9:1
1992		564	3	123	538	4	126	1.0:1
1993		562	3	74	544	2	128	0.6:1
1994		600	5	56	561	2	56	1.0:1

^a 1986 – 1994 from Waltemyer, ADF&G, Soldotna.

Table 32. Cumulative proportion by date of pink salmon counts recorded in the Yentna River 1961–1994.

Date	Cumulative Proportion													
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1990	1991	1992	1993	1994
27-Jun		0.000												
28-Jun		0.000												
29-Jun	0.000	0.000				0.000	0.000							
30-Jun	0.002	0.000	0.000			0.000	0.000							
01-Jul	0.003	0.000	0.001	0.000	0.001	0.000	0.002							
02-Jul	0.005	0.000	0.001	0.000	0.002	0.000	0.004							
03-Jul	0.007	0.000	0.001	0.000	0.003	0.000	0.008							
04-Jul	0.008	0.000	0.002	0.000	0.003	0.000	0.011							
05-Jul	0.008	0.000	0.003	0.000	0.005	0.001	0.015							
06-Jul	0.011	0.000	0.003	0.000	0.007	0.001	0.018							
07-Jul	0.015	0.000	0.003	0.000	0.011	0.001	0.022	0.000	0.003	0.000	0.002	0.000	0.001	0.000
08-Jul	0.021	0.000	0.003	0.000	0.012	0.001	0.025	0.000	0.008	0.000	0.005	0.000	0.002	0.001
09-Jul	0.025	0.000	0.004	0.000	0.015	0.001	0.029	0.000	0.013	0.000	0.006	0.001	0.004	0.002
10-Jul	0.037	0.000	0.004	0.000	0.018	0.001	0.031	0.000	0.018	0.000	0.007	0.001	0.005	0.002
11-Jul	0.039	0.000	0.005	0.001	0.021	0.001	0.035	0.000	0.026	0.000	0.009	0.001	0.006	0.003
12-Jul	0.039	0.000	0.006	0.001	0.025	0.001	0.041	0.000	0.034	0.000	0.010	0.001	0.007	0.004
13-Jul	0.042	0.000	0.009	0.001	0.030	0.001	0.047	0.000	0.043	0.001	0.012	0.001	0.008	0.006
14-Jul	0.050	0.000	0.030	0.001	0.033	0.002	0.051	0.000	0.052	0.001	0.014	0.002	0.009	0.007
15-Jul	0.057	0.000	0.039	0.001	0.038	0.003	0.056	0.001	0.058	0.001	0.016	0.002	0.014	0.008
16-Jul	0.061	0.000	0.056	0.001	0.042	0.007	0.065	0.001	0.060	0.001	0.018	0.003	0.013	0.011
17-Jul	0.062	0.001	0.098	0.003	0.046	0.011	0.075	0.001	0.071	0.002	0.019	0.005	0.024	0.018
18-Jul	0.072	0.002	0.171	0.008	0.050	0.014	0.088	0.001	0.105	0.002	0.027	0.009	0.030	0.049
19-Jul	0.082	0.010	0.298	0.023	0.053	0.015	0.099	0.002	0.158	0.014	0.063	0.017	0.082	0.095
20-Jul	0.105	0.021	0.400	0.067	0.056	0.016	0.110	0.005	0.196	0.030	0.092	0.028	0.420	0.139
21-Jul	0.132	0.040	0.511	0.126	0.060	0.017	0.135	0.013	0.224	0.050	0.120	0.050	0.464	0.210
22-Jul	0.158	0.056	0.565	0.190	0.064	0.021	0.156	0.019	0.255	0.084	0.151	0.078	0.513	0.293
23-Jul	0.236	0.078	0.638	0.277	0.078	0.059	0.180	0.032	0.277	0.132	0.180	0.126	0.574	0.364
24-Jul	0.311	0.126	0.704	0.365	0.135	0.125	0.222	0.061	0.349	0.190	0.216	0.212	0.647	0.467
25-Jul	0.398	0.162	0.743	0.420	0.226	0.222	0.307	0.129	0.420	0.263	0.257	0.322	0.709	0.548
26-Jul	0.464	0.192	0.791	0.466	0.329	0.369	0.407	0.231	0.493	0.342	0.308	0.459	0.763	0.628
27-Jul	0.512	0.237	0.820	0.510	0.475	0.535	0.537	0.338	0.570	0.433	0.361	0.561	0.810	0.693
28-Jul	0.580	0.330	0.843	0.578	0.536	0.695	0.624	0.459	0.638	0.514	0.441	0.668	0.831	0.741
29-Jul	0.639	0.447	0.855	0.669	0.753	0.830	0.668	0.589	0.691	0.580	0.499	0.751	0.857	0.796
30-Jul	0.705	0.562	0.864	0.728	0.833	0.894	0.701	0.662	0.730	0.640	0.567	0.815	0.893	0.864
31-Jul	0.752	0.654	0.871	0.784	0.877	0.924	0.729	0.722	0.748	0.722	0.640	0.862	0.927	0.906
01-Aug	0.795	0.735	0.879	0.837	0.903	0.957	0.741	0.768	0.759	0.815	0.677	0.899	0.938	0.937
02-Aug	0.819	0.824	0.903	0.873	0.926	0.979	0.767	0.826	0.770	0.864	0.703	0.924	0.950	0.958
03-Aug	0.834	0.896	0.908	0.903	0.942	0.991	0.799	0.878	0.781	0.927	0.751	0.941	0.967	0.970
04-Aug	0.849	0.934	0.912	0.925	0.956	0.996	0.838	0.909	0.812	0.947	0.804	0.954	0.965	0.978
05-Aug	0.865	0.953	0.918	0.943	0.966	0.999	0.870	0.931	0.850	0.964	0.870	0.961	0.992	0.985
06-Aug	0.883	0.962	0.924	0.956	0.978	1.000	0.887	0.951	0.883	0.976	0.911	0.967	0.996	0.991
07-Aug	0.897	0.969	0.931	0.962	0.991		0.895	0.969	0.912	0.984	0.951	0.971	1.000	0.995
08-Aug	0.905	0.978	0.936	0.969	1.000		0.901	0.962	0.924	0.990	0.971	0.979		0.997
09-Aug	0.913	0.984	0.937	0.975			0.921	0.990	0.938	0.994	0.985	0.990		0.998
10-Aug	0.918	0.989	0.938	0.982			0.950	0.995	0.943	0.997	0.995	0.997		1.000
11-Aug	0.924	0.991	0.943	0.986			0.975	1.000	0.948	0.998	0.999	1.000		1.000
12-Aug	0.929	0.994	0.951	0.988			0.989		0.952	1.000	1.000			1.000
13-Aug	0.930	0.996	0.958	0.991			0.996		0.963					
14-Aug	0.931	0.997	0.966	0.992			1.000		0.974					
15-Aug	0.935	0.998	0.971	0.994					0.989					
16-Aug	0.942	0.998	0.978	0.994					0.994					
17-Aug	0.949	0.999	0.984	0.995					0.997					
18-Aug	0.958	0.999	0.988	0.996					0.998					
19-Aug	0.967	0.999	0.990	0.997					0.999					
20-Aug	0.979	0.999	0.992	0.997					1.000					
21-Aug	0.984	0.999	0.993	0.997										
22-Aug	0.989	1.000	0.993	0.998										
23-Aug	0.992	1.000	0.994	0.998										
24-Aug	0.995	1.000	0.995	0.998										
25-Aug	0.997	1.000	0.996	0.999										
26-Aug	0.999	1.000	0.996	0.999										
27-Aug	1.000	1.000	0.997	0.999										
28-Aug	1.000	1.000	0.998	0.999										
29-Aug		1.000	0.998	0.999										
30-Aug		1.000	0.999	1.000										
31-Aug		1.000	0.999	1.000										
01-Sep		1.000	0.999	1.000										
02-Sep		1.000	0.999	1.000										
03-Sep		1.000	1.000	1.000										
04-Sep		1.000	1.000	1.000										
05-Sep		1.000	1.000	1.000										
Midpoint	27-Jul	30-Jul	21-Jul	27-Jul	28-Jul	27-Jul	27-Jul	29-Jul	27-Jul	28-Jul	30-Jul	27-Jul	22-Jul	25-Jul
No. days* for 80%	20	12	16	14	9	8+	20	11	21	12	17	11	16	12

* Inclusive dates: dates proportion of escapement reached 10% through date proportion of escapement reached 90%.

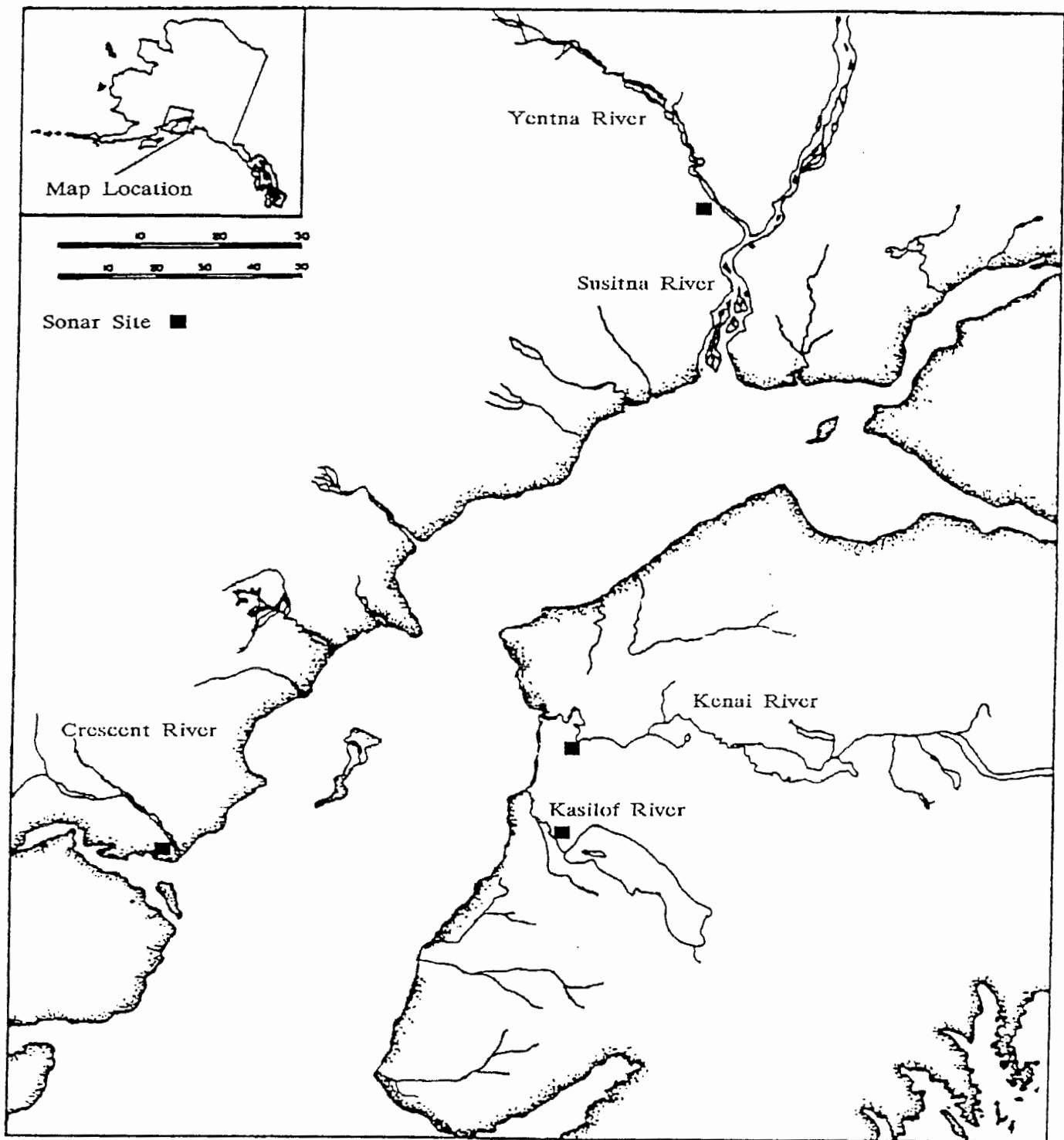


Figure 1. Upper Cook Inlet, Alaska, and sites where sockeye salmon escapement was monitored with side-scanning sonar.

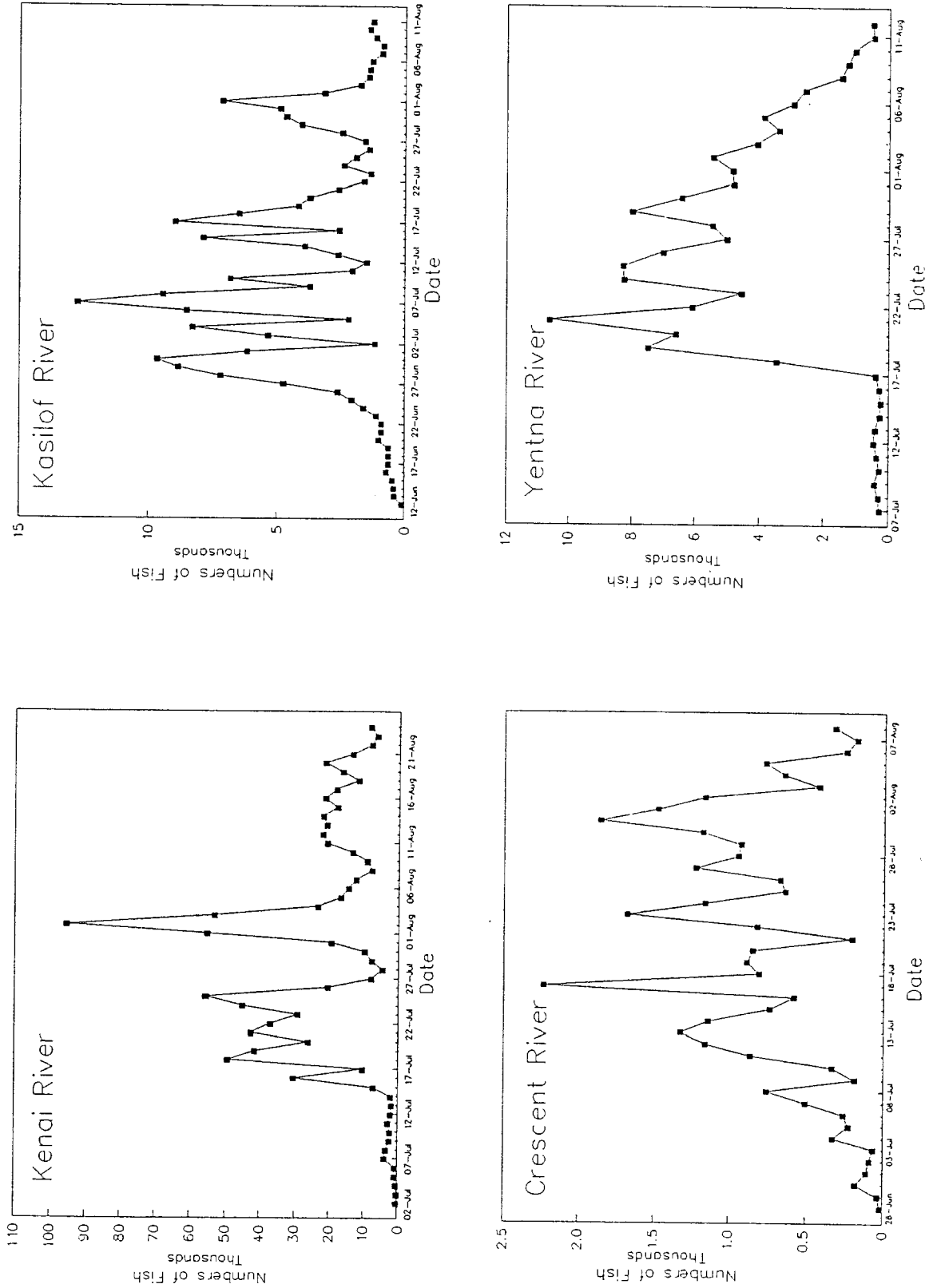


Figure 2. Daily escapement of sockeye salmon into the Kenai, Kasilof, Crescent, and Yentna Rivers, 1994.

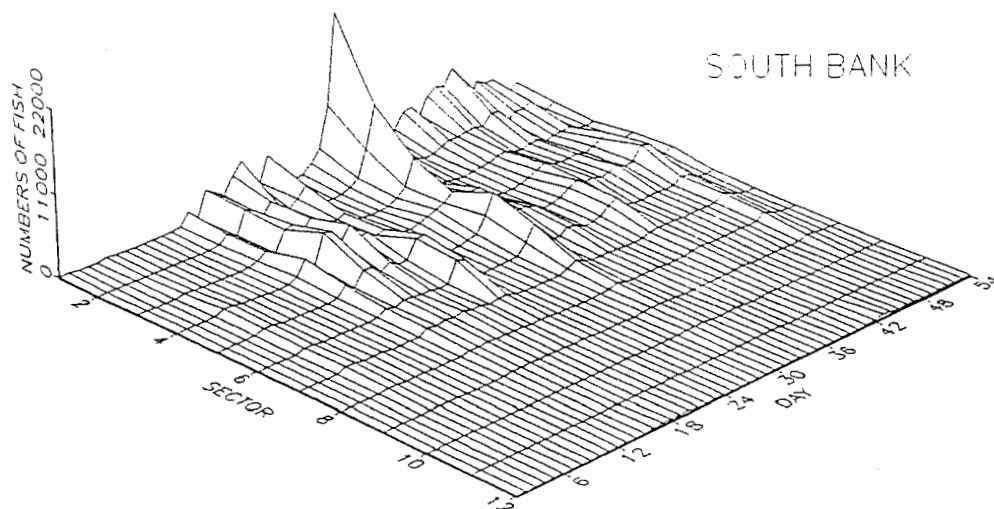
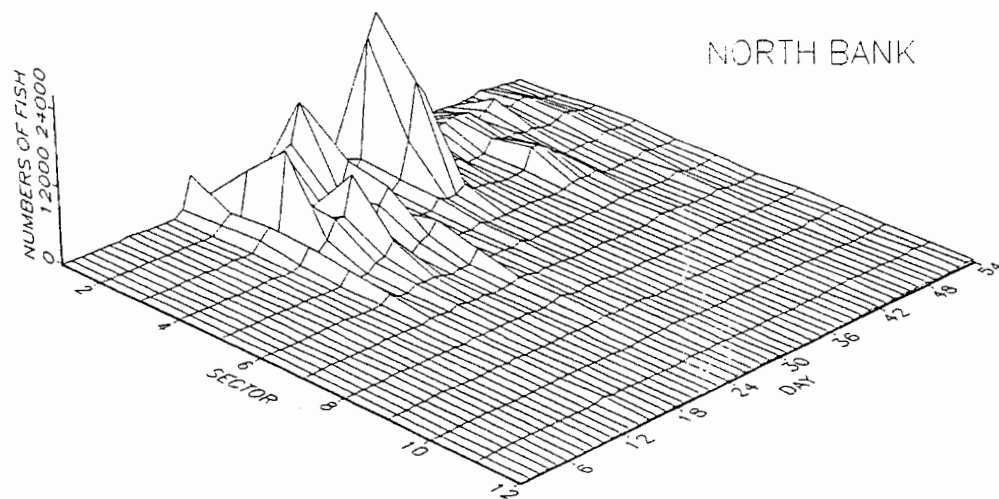


Figure 3. Distribution of salmon sonar counts by sector in the Kenai River, 1994.

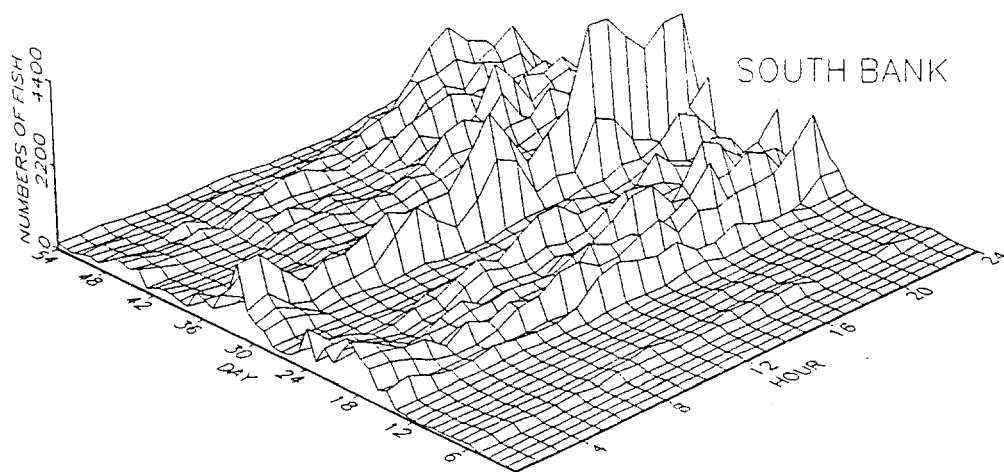
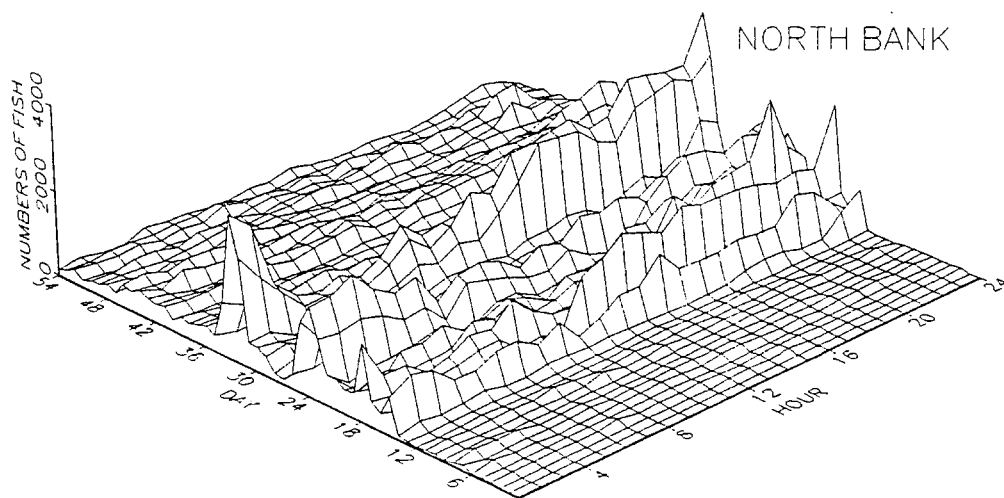


Figure 4. Hourly distribution of salmon migrating past the Kenai River sonar counters, 1994.

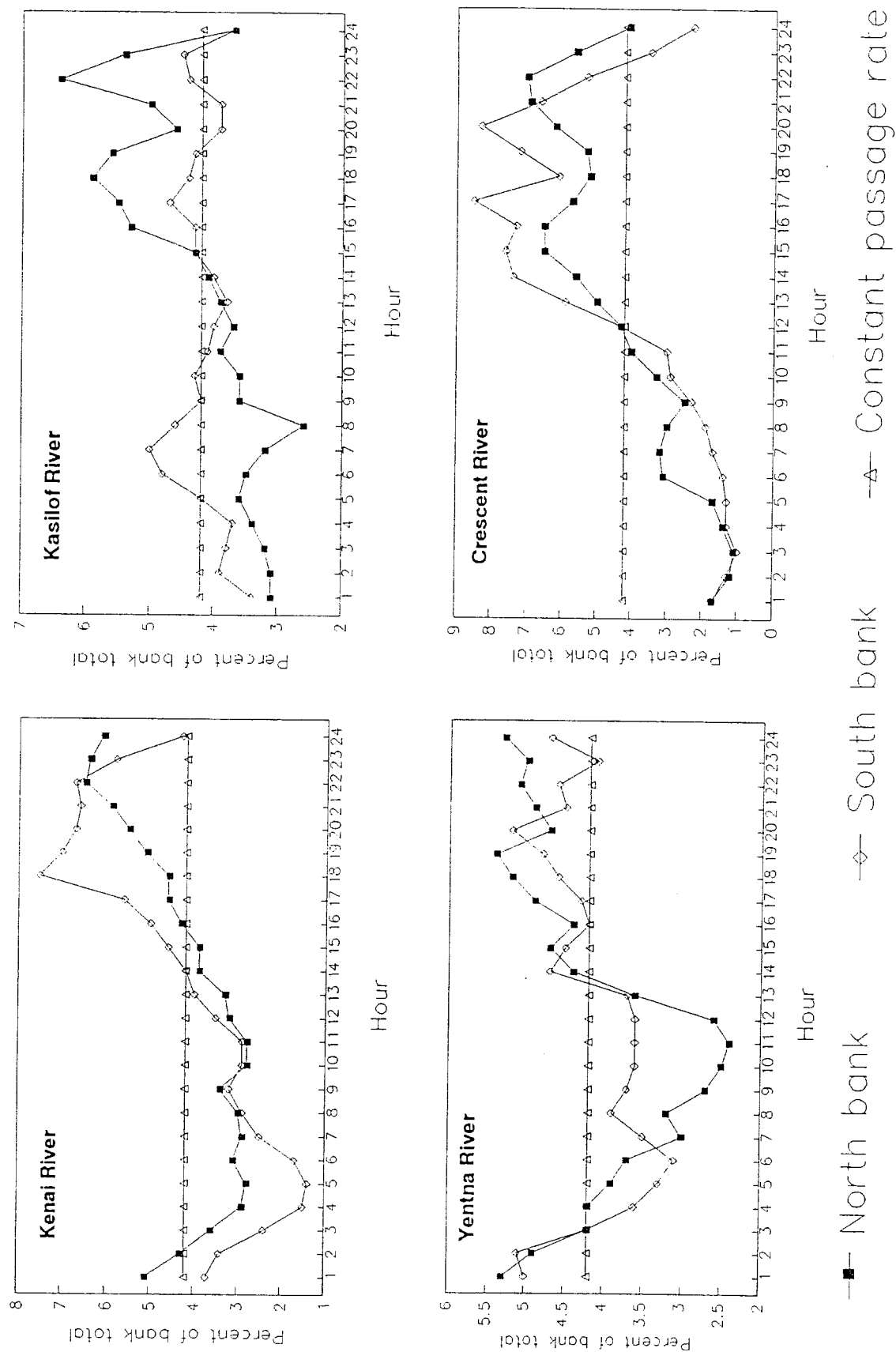


Figure 5. Mean hourly passage rates of salmon migrating past the Kenai, Kasilof, Crescent and Yentna River sonar counters, 1994.

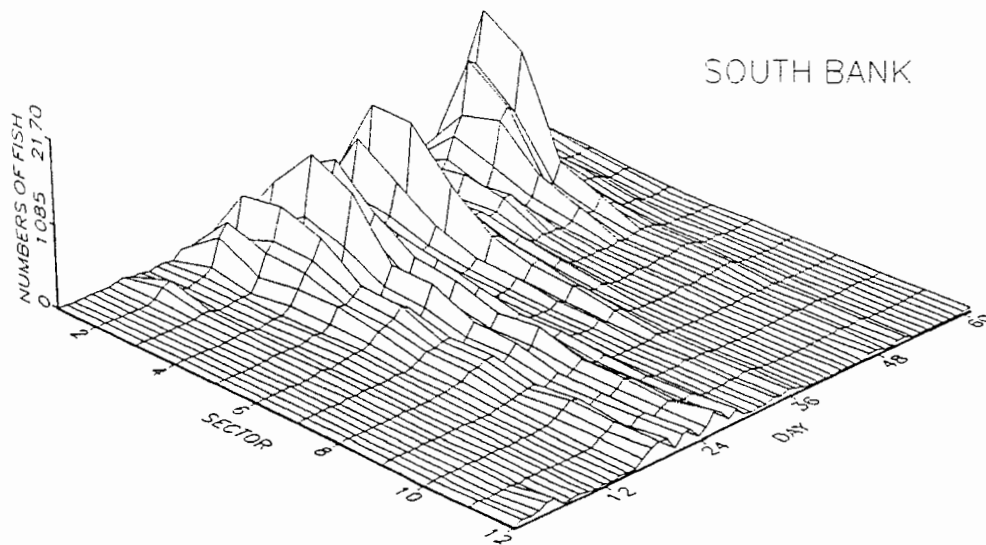
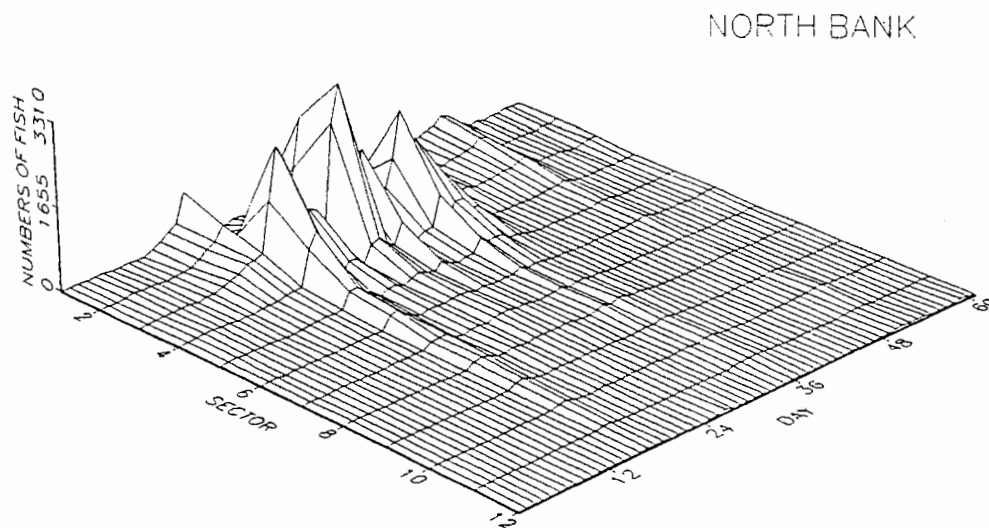


Figure 6. Distribution of salmon sonar counts by sector in the Kasilof River, 1994.

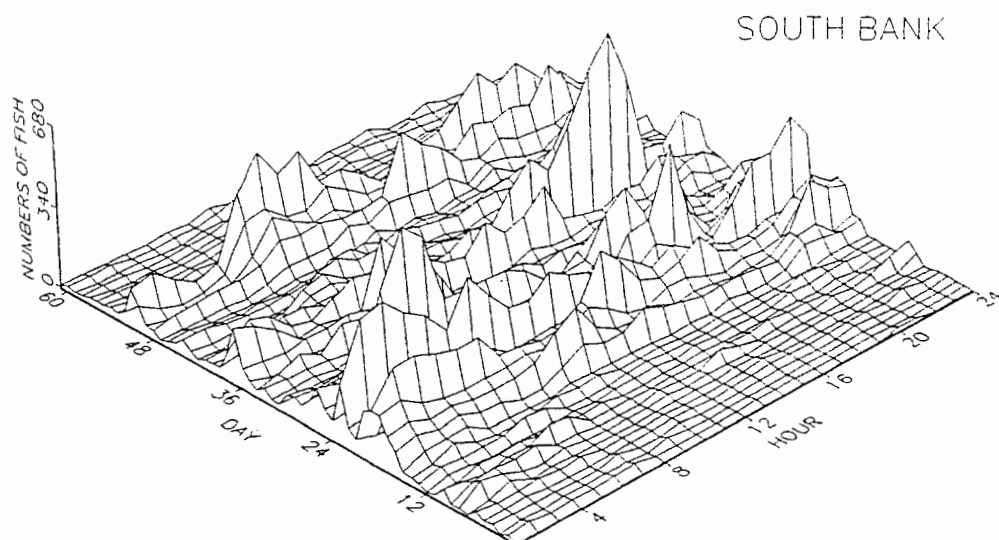
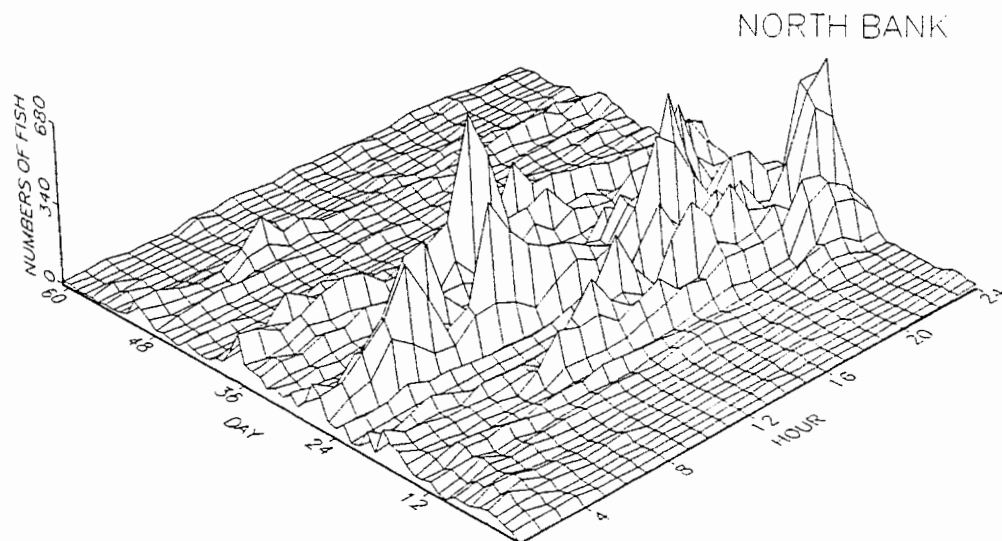


Figure 7. Hourly distribution of salmon migrating past the Kasilof River sonar counters, 1994.

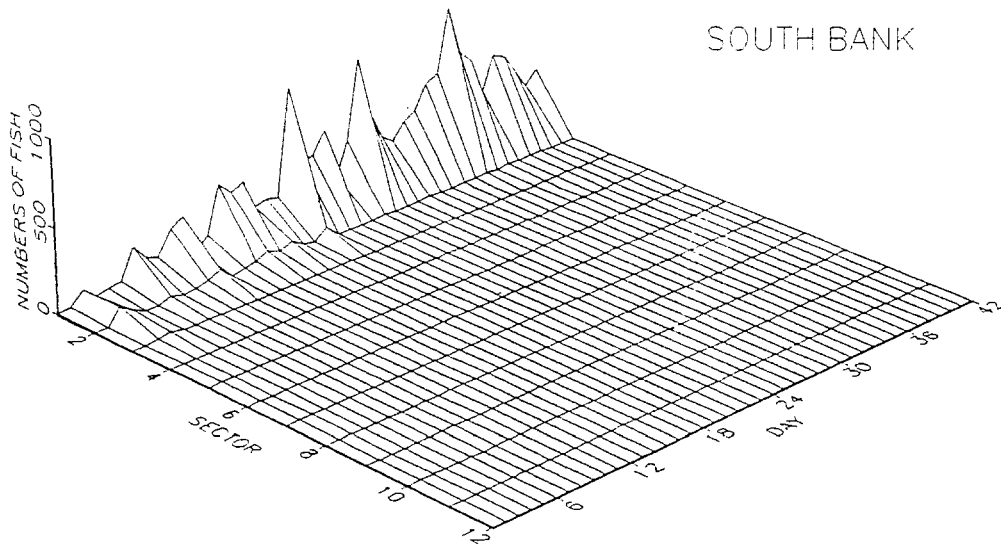
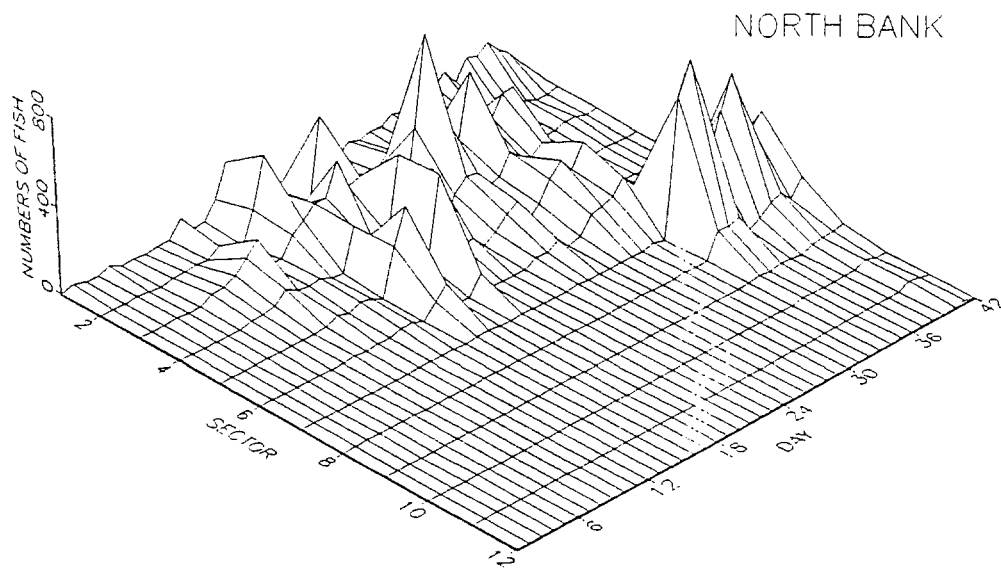


Figure 8. Distribution of salmon sonar counts by sector in the Crescent River, 1994.

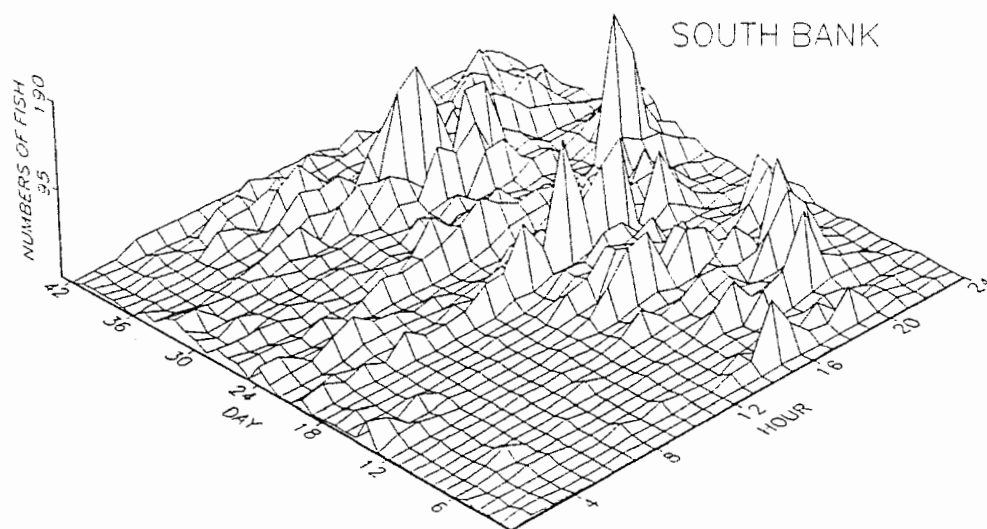
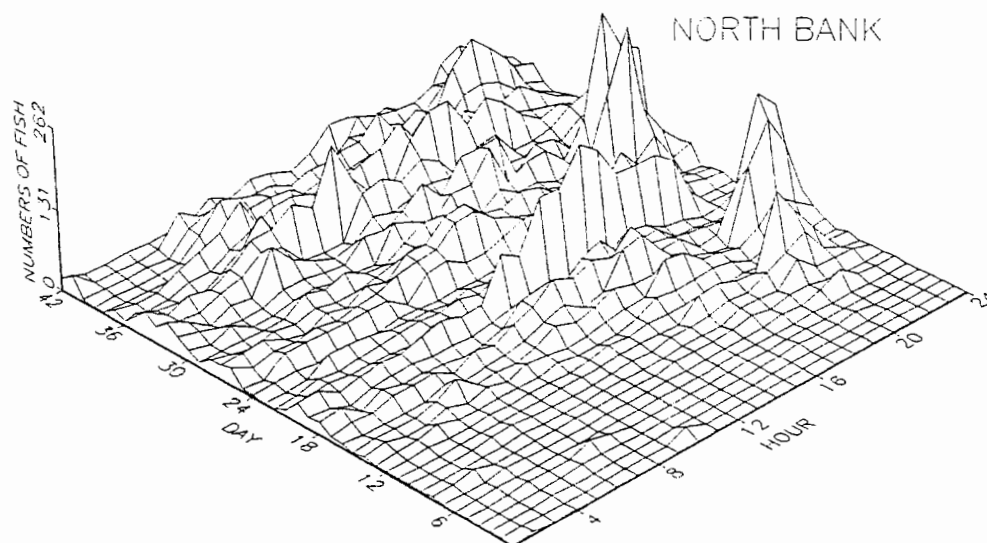
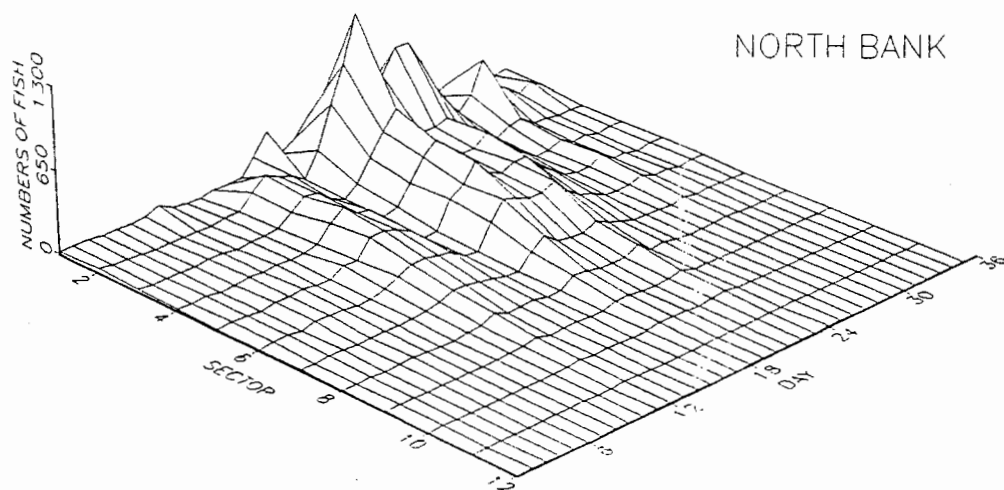
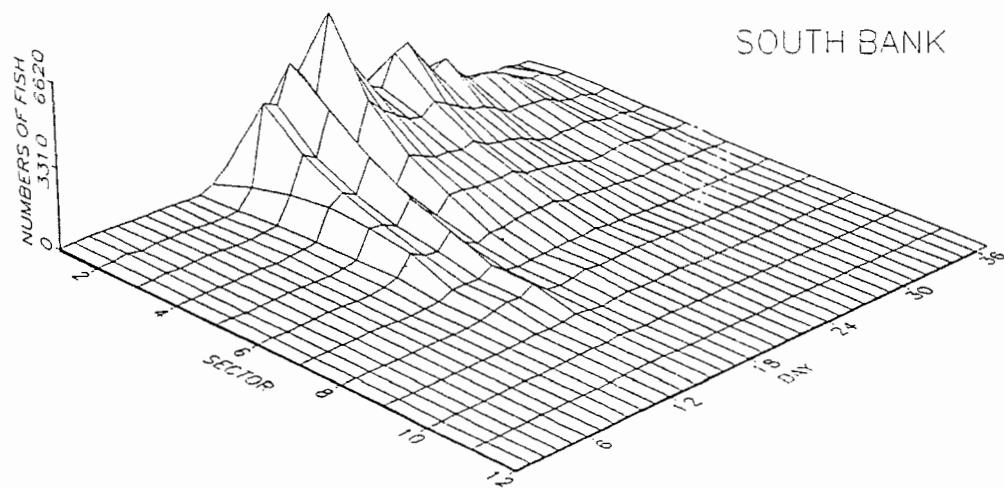


Figure 9. Hourly distribution of salmon migrating past the Crescent River sonar counters, 1994.



NORTH BANK



SOUTH BANK

Figure 10. Distribution of salmon sonar counts by sector in the Yentna River, 1994.

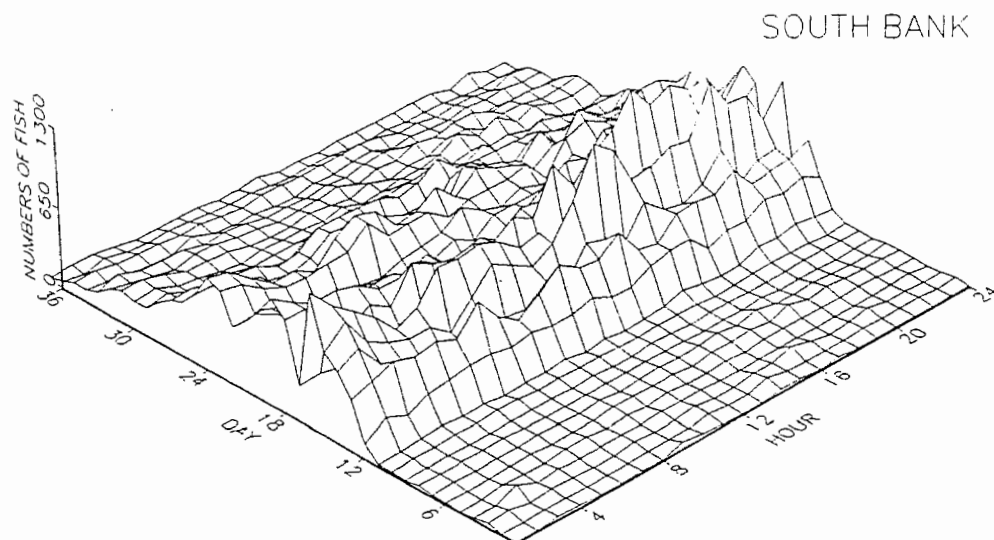
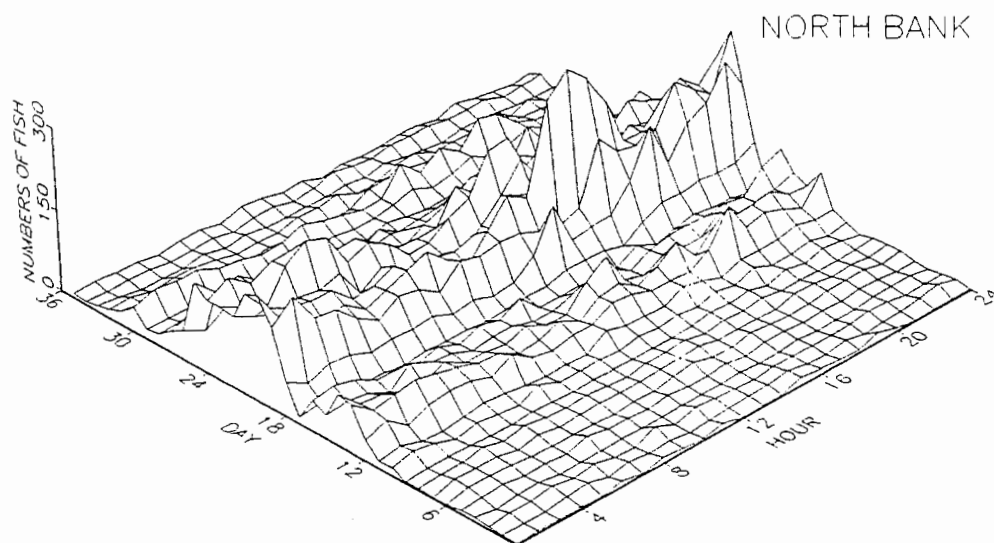
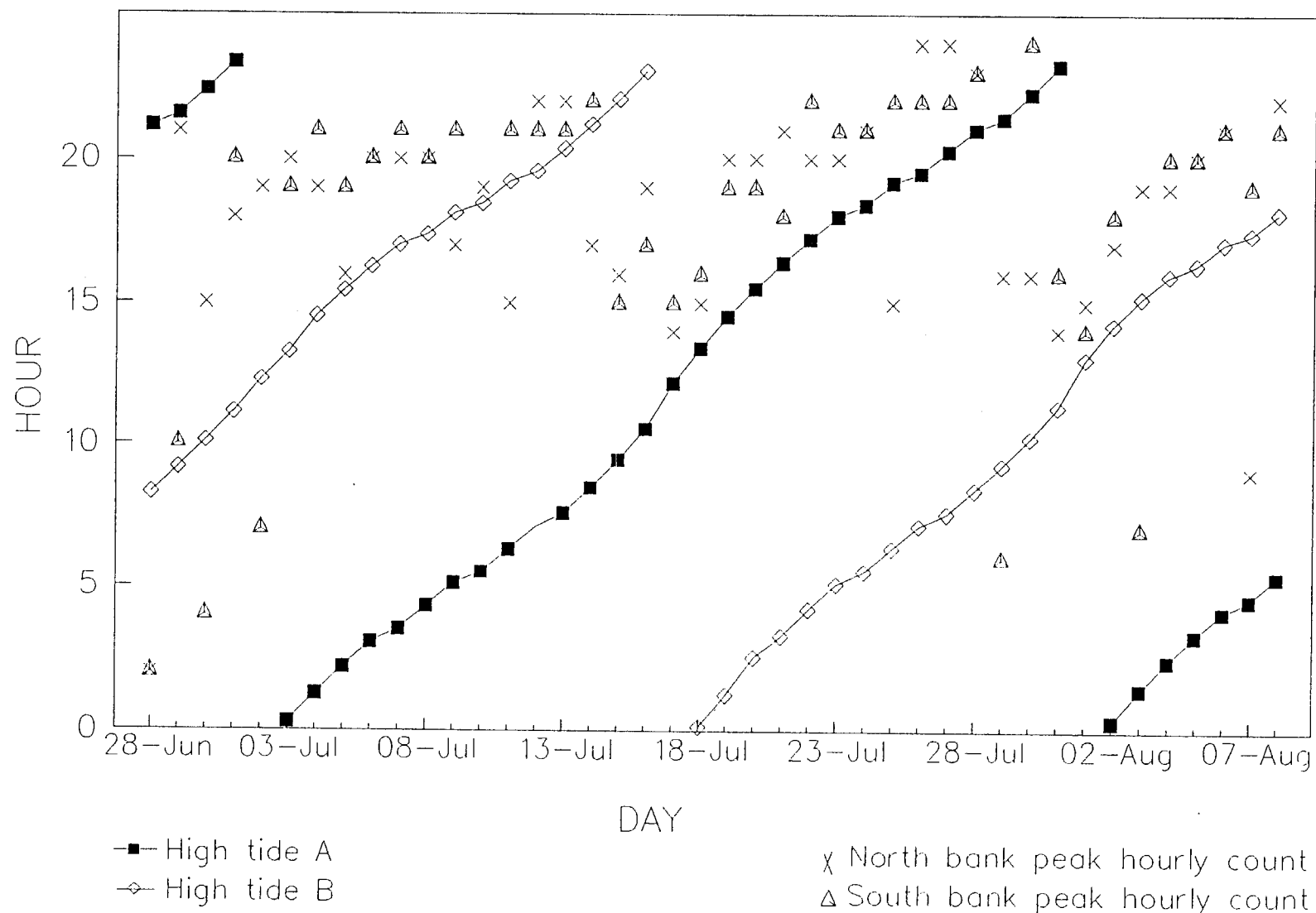


Figure 11. Hourly distribution of salmon migrating past the Yentna River sonar counters, 1994.



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Figure 12. Peak daily sonar counts and daily high tides at Crescent River, 1994.

Appendix A.1. Estimated salmon escapement adjacent to the north bank of the Kenai River, 2 July through 24 August 1994. Species composition of daily sonar counts based on fish wheel catches.

Date	Sockeye		Pink		Coho		Chinook	
	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
02-Jul	252	252	14	14	0	0	8	8
03-Jul	38	290	2	16	0	0	1	9
04-Jul	421	711	25	41	0	0	13	22
05-Jul	924	1,635	53	94	0	0	29	51
06-Jul	562	2,197	32	126	0	0	18	69
07-Jul	1,374	3,571	78	204	0	0	44	113
08-Jul	1,259	4,830	72	276	0	0	40	153
09-Jul	1,300	6,130	75	351	0	0	41	194
10-Jul	992	7,122	56	407	0	0	32	226
11-Jul	1,550	8,672	89	496	0	0	49	275
12-Jul	1,407	10,079	80	576	0	0	45	320
13-Jul	1,045	11,124	60	636	0	0	33	353
14-Jul	938	12,062	54	690	0	0	30	383
15-Jul	4,506	16,568	258	948	0	0	144	527
16-Jul	19,361	35,929	67	1,015	0	0	67	594
17-Jul	4,809	40,738	16	1,031	0	0	17	611
18-Jul	28,107	68,845	97	1,128	0	0	97	708
19-Jul	22,278	91,123	0	1,128	0	0	0	708
20-Jul	13,580	104,703	41	1,169	0	0	82	790
21-Jul	22,825	127,528	69	1,238	0	0	138	928
22-Jul	21,413	148,941	0	1,238	0	0	0	928
23-Jul	17,915	166,856	0	1,238	0	0	0	928
24-Jul	28,807	195,663	0	1,238	0	0	0	928
25-Jul	35,124	230,787	0	1,238	0	0	0	928
26-Jul	12,954	243,741	83	1,321	0	0	0	928
27-Jul	4,820	248,561	31	1,352	0	0	0	928
28-Jul	2,304	250,865	15	1,367	0	0	0	928
29-Jul	4,467	255,332	0	1,367	0	0	0	928
30-Jul	4,319	259,651	0	1,367	0	0	0	928
31-Jul	10,005	269,656	0	1,367	0	0	0	928
01-Aug	31,297	300,953	0	1,367	0	0	0	928
02-Aug	43,566	344,519	0	1,367	0	0	0	928
03-Aug	29,207	373,726	0	1,367	0	0	0	928
04-Aug	12,193	385,919	329	1,696	0	0	198	1,126
05-Aug	6,385	392,304	172	1,868	0	0	104	1,230
06-Aug	5,844	398,148	38	1,906	0	0	39	1,269
07-Aug	5,558	403,706	108	2,014	0	0	0	1,269
08-Aug	4,249	407,955	145	2,159	83	83	21	1,290
09-Aug	4,690	412,645	161	2,320	91	174	23	1,313
10-Aug	5,523	418,168	188	2,508	108	282	27	1,340
11-Aug	10,954	429,122	1,545	4,053	202	484	403	1,743
12-Aug	11,454	440,576	1,617	5,670	210	694	422	2,165
13-Aug	7,950	448,526	3,234	8,904	607	1,301	67	2,232
14-Aug	9,268	457,794	875	9,779	199	1,500	0	2,232
15-Aug	7,013	464,807	463	10,242	151	1,651	11	2,243
16-Aug	6,851	471,658	997	11,239	515	2,166	32	2,275
17-Aug	5,790	477,448	497	11,736	149	2,315	124	2,399
18-Aug	5,961	483,409	485	12,221	101	2,416	20	2,419
19-Aug	6,779	490,188	528	12,749	81	2,497	0	2,419
20-Aug	8,358	498,546	651	13,400	100	2,597	0	2,419
21-Aug	6,173	504,719	480	13,880	74	2,671	0	2,419
22-Aug	5,497	510,216	948	14,828	28	2,699	28	2,447
23-Aug	4,895	515,111	845	15,673	25	2,724	25	2,472
24-Aug	5,484	520,595	946	16,619	28	2,752	28	2,500

Appendix A.2. Estimated salmon escapement adjacent to the south bank of the Kenai River, 2 July through 24 August 1994. Species composition of daily sonar counts based on fish wheel catches.

Date	Sockeye		Pink		Coho		Chinook	
	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
02-Jul	147	147	8	8	0	0	5	5
03-Jul	263	410	15	23	0	0	8	13
04-Jul	113	523	6	29	0	0	4	17
05-Jul	167	690	10	39	0	0	5	22
06-Jul	297	987	17	56	0	0	9	31
07-Jul	2,648	3,635	152	208	0	0	84	115
08-Jul	2,263	5,898	130	338	0	0	72	187
09-Jul	1,195	7,093	69	407	0	0	38	225
10-Jul	1,411	8,504	81	488	0	0	45	270
11-Jul	1,453	9,957	84	572	0	0	46	316
12-Jul	793	10,750	46	618	0	0	25	341
13-Jul	813	11,563	46	664	0	0	26	367
14-Jul	1,207	12,770	70	734	0	0	38	405
15-Jul	2,698	15,468	155	889	0	0	86	491
16-Jul	11,185	26,653	38	927	0	0	39	530
17-Jul	5,560	32,213	19	946	0	0	19	549
18-Jul	21,377	53,590	73	1,019	0	0	74	623
19-Jul	19,356	72,946	0	1,019	0	0	0	623
20-Jul	12,621	85,567	39	1,058	0	0	76	699
21-Jul	19,919	105,486	60	1,118	0	0	121	820
22-Jul	15,642	121,128	0	1,118	0	0	0	820
23-Jul	11,448	132,576	0	1,118	0	0	0	820
24-Jul	16,415	148,991	0	1,118	0	0	0	820
25-Jul	20,648	169,639	0	1,118	0	0	0	820
26-Jul	7,613	177,252	49	1,167	0	0	0	820
27-Jul	3,207	180,459	21	1,188	0	0	0	820
28-Jul	2,457	182,916	16	1,204	0	0	0	820
29-Jul	3,393	186,309	0	1,204	0	0	0	820
30-Jul	5,616	191,925	0	1,204	0	0	0	820
31-Jul	9,488	201,413	0	1,204	0	0	0	820
01-Aug	24,085	225,498	0	1,204	0	0	0	820
02-Aug	51,907	277,405	0	1,204	0	0	0	820
03-Aug	24,067	301,472	0	1,204	0	0	0	820
04-Aug	11,356	312,828	307	1,511	0	0	184	1,004
05-Aug	10,499	323,327	284	1,795	0	0	170	1,174
06-Aug	8,869	332,196	58	1,853	0	0	59	1,233
07-Aug	6,836	339,032	133	1,986	0	0	0	1,233
08-Aug	3,547	342,579	121	2,107	70	70	17	1,250
09-Aug	4,551	347,130	155	2,262	89	159	22	1,272
10-Aug	7,911	355,041	270	2,532	154	313	39	1,311
11-Aug	9,938	364,979	1,402	3,934	183	496	366	1,677
12-Aug	10,806	375,785	1,524	5,458	199	695	398	2,075
13-Aug	13,104	388,889	620	6,078	414	1,109	0	2,075
14-Aug	12,810	401,699	606	6,684	405	1,514	0	2,075
15-Aug	10,828	412,527	513	7,197	342	1,856	0	2,075
16-Aug	14,631	427,158	693	7,890	462	2,318	0	2,075
17-Aug	12,359	439,517	1,983	9,873	595	2,913	0	2,075
18-Aug	5,910	445,427	949	10,822	284	3,197	0	2,075
19-Aug	9,658	455,085	1,549	12,371	465	3,662	0	2,075
20-Aug	13,134	468,219	2,107	14,478	632	4,294	0	2,075
21-Aug	7,371	475,590	7,561	22,039	189	4,483	189	2,264
22-Aug	2,597	478,187	2,664	24,703	66	4,549	67	2,331
23-Aug	1,683	479,870	1,727	26,430	43	4,592	43	2,374
24-Aug	2,981	482,851	3,058	29,488	77	4,669	76	2,450

Appendix A.3. Kenai River north bank sonar counts by hour, 2 July through 24 August 1994.

Counts by Hour																										
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
02-Jul	23	29	35	26	25	16	23	11	18	15	23	16	0	0	0	0	5	8	0	0	0	0	0	1	274	274
03-Jul	0	10	9	1	3	1	0	4	0	0	0	0	0	0	3	1	0	2	0	2	0	1	2	2	41	315
04-Jul	5	10	2	17	8	12	8	19	1	9	6	27	53	11	53	16	15	16	12	12	26	39	26	56	459	774
05-Jul	37	53	52	63	44	49	112	18	51	37	57	40	16	40	42	57	33	33	36	13	18	29	45	31	1,006	1,780
06-Jul	36	21	23	34	54	53	51	38	46	51	25	6	2	8	2	2	8	5	14	5	37	39	24	28	612	2,392
07-Jul	21	131	48	56	9	33	39	69	66	96	73	39	99	96	57	19	63	29	64	85	100	56	86	62	1,496	3,888
08-Jul	121	19	40	43	51	58	87	46	73	59	100	96	60	76	21	43	43	41	60	57	53	23	36	65	1,371	5,259
09-Jul	59	173	149	129	26	60	75	23	33	24	52	60	37	64	54	23	62	88	15	39	56	31	20	59	1,416	6,675
10-Jul	39	61	82	17	27	23	17	25	31	31	43	54	51	54	46	78	31	69	68	23	53	27	59	71	1,080	7,755
11-Jul	70	73	26	18	43	32	22	58	174	68	58	111	74	65	97	59	66	88	91	90	89	60	121	35	1,688	9,443
12-Jul	46	90	58	79	86	48	163	83	41	67	102	56	73	87	52	58	38	67	88	9	52	36	8	45	1,532	10,975
13-Jul	23	6	33	88	48	43	34	15	63	44	60	60	91	71	48	80	110	40	30	36	23	19	39	34	1,138	12,113
14-Jul	46	16	51	58	72	43	27	48	62	50	29	59	62	26	45	25	34	32	18	29	32	31	44	83	1,022	13,135
15-Jul	80	189	125	151	231	101	76	173	160	121	164	109	112	86	67	84	95	240	317	299	141	181	633	973	4,908	18,043
16-Jul	857	1,160	1,012	601	566	804	814	516	816	287	500	816	816	1,364	834	785	781	891	816	816	1,363	1,229	755	405	19,604	37,647
17-Jul	399	209	127	157	108	362	267	204	161	97	81	34	48	32	23	18	16	28	41	60	412	524	698	736	4,842	42,489
18-Jul	563	484	493	456	505	629	647	226	300	134	1,274	1,508	1,884	1,702	1,500	1,919	1,748	1,731	1,738	1,641	1,478	1,564	1,416	2,772	28,312	70,801
19-Jul	1,767	837	850	478	604	880	795	1,276	789	531	460	842	861	1,154	1,226	1,201	882	1,370	1,335	1,069	1,114	882	572	503	22,278	93,079
20-Jul	558	720	423	36	31	107	286	385	339	302	356	339	746	886	723	790	915	1,036	991	861	764	994	884	231	13,703	106,782
21-Jul	539	433	549	333	345	384	804	634	882	388	467	656	588	450	763	933	1,704	1,224	1,544	1,676	1,752	3,029	1,707	1,248	23,032	129,814
22-Jul	687	182	76	658	622	812	483	590	792	622	357	733	652	832	1,243	1,169	1,484	978	1,494	1,332	1,337	1,530	1,439	1,309	21,413	151,227
23-Jul	672	282	414	430	481	601	305	377	646	639	375	430	525	495	469	1,038	847	1,013	1,381	1,276	1,470	984	1,093	1,672	17,915	169,142
24-Jul	1,400	1,313	1,430	1,287	978	1,051	557	1,200	1,061	912	693	659	953	622	467	581	1,275	1,730	2,010	1,931	1,667	1,903	1,761	1,366	28,807	197,949
25-Jul	2,034	2,049	2,335	1,801	1,500	1,671	883	1,300	1,380	1,199	850	1,170	1,006	1,464	1,335	1,491	1,296	1,596	1,873	1,166	612	1,421	1,794	1,898	35,124	233,073
26-Jul	1,606	968	947	854	1,148	944	1,005	369	446	329	426	309	243	164	133	141	318	431	316	472	538	344	308	278	13,037	246,110
27-Jul	327	236	363	220	167	169	81	82	204	113	121	77	120	238	209	251	380	204	341	232	137	191	232	156	4,851	250,961
28-Jul	107	148	184	109	86	59	59	64	78	96	78	78	96	72	102	49	47	42	53	74	270	176	96	96	2,319	253,280
29-Jul	136	309	186	213	279	271	177	134	343	235	89	186	116	150	142	149	78	120	121	97	152	199	293	292	4,467	257,747
30-Jul	436	512	275	146	103	73	38	40	38	51	102	39	158	226	184	175	104	158	150	157	189	201	353	411	4,319	262,066
31-Jul	536	450	346	182	71	139	85	74	131	271	283	273	155	353	383	532	459	195	500	710	470	654	1,497	1,256	10,005	272,071
01-Aug	537	588	308	120	302	234	289	413	692	517	787	665	1,102	1,676	2,412	2,343	2,291	1,850	1,652	2,269	2,438	2,603	2,381	2,828	31,297	303,368
02-Aug	2,409	1,730	1,170	673	707	622	538	797	1,208	793	1,111	1,718	1,500	2,245	2,273	2,407	2,490	2,080	2,186	2,901	2,821	2,697	2,692	3,798	43,566	346,934
03-Aug	3,310	2,874	1,301	841	647	875	632	887	1,472	1,015	1,108	1,119	601	958	888	951	973	881	1,104	1,339	1,719	1,439	1,309	964	29,207	376,141
04-Aug	1,194	947	515	379	268	309	209	258	305	210	344	287	390	449	401	254	344	496	732	766	860	1,066	920	817	12,720	388,861
05-Aug	345	217	264	161	107	152	194	103	100	256	102	131	97	165	187	273	438	477	304	427	390	480	785	506	6,661	395,522
06-Aug	464	416	437	124	255	195	162	136	113	111	225	108	104	115	53	180	158	202	252	300	385	854	337	235	5,921	401,443
07-Aug	402	361	233	111	237	374	447	239	303	154	106	96	124	82	84	88	142	112	133	134	195	546	619	344	5,666	407,109
08-Aug	340	338	179	147	109	138	157	123	97	67	68	35	78	69	123	108	110	108	118	116	372	575	553	370	4,498	411,607
09-Aug	403	319	226	240	172	218	233	146	162	165	115	109	69	80	92	120	185	156	300	394	392	258	259	152	4,965	416,572
10-Aug	240	201	196	193	102	137	109	84	104	188	153	127	219	185	184	242	293	310	413	377	420	552	466	351	5,846	422,418

-Continued-

	Counts by Hour																								Daily Total	Cum Total
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
11-Aug	472	399	389	438	580	408	298	390	455	541	288	298	487	416	461	495	501	788	739	980	769	928	979	605	13,104	435,522
12-Aug	425	354	279	287	279	413	421	391	369	575	348	416	271	425	466	503	545	542	559	801	1,110	1,213	1,462	1,249	13,703	449,225
13-Aug	465	366	226	186	204	271	199	324	501	525	381	518	363	478	393	396	479	672	616	621	752	682	1,162	1,078	11,858	461,083
14-Aug	559	378	635	504	432	374	381	468	523	381	304	294	432	301	367	298	459	456	438	460	444	454	518	482	10,342	471,425
15-Aug	447	372	332	392	229	315	324	297	329	248	172	117	321	236	141	250	392	383	301	394	308	452	396	490	7,638	479,053
16-Aug	508	567	414	521	502	433	581	448	374	297	274	249	282	305	267	208	185	180	170	145	235	414	419	417	8395	487,458
17-Aug	233	244	273	179	137	140	224	227	324	344	223	274	263	266	300	279	282	323	332	330	296	240	439	388	6560	494,018
18-Aug	344	262	121	257	141	181	372	316	326	227	205	113	128	148	96	141	270	175	292	368	810	452	504	318	6,567	500,585
19-Aug	256	253	233	176	209	296	355	283	301	292	399	396	255	245	330	271	252	249	384	412	436	334	418	353	7,388	507,973
20-Aug	231	205	328	343	211	379	345	363	198	273	295	261	261	305	452	557	360	495	377	467	839	922	384	258	9,109	517,082
21-Aug	151	114	60	117	172	111	191	213	293	340	253	276	148	241	164	493	342	280	341	543	480	657	429	318	6,727	523,809
22-Aug	326	268	240	320	201	284	246	438	304	352	231	363	203	401	321	138	158	118	112	252	298	369	316	250	6,509	530,318
23-Aug	227	197	264	288	254	307	293	392	255	164	181	252	236	193	144	126	182	187	195	216	368	348	291	230	5,790	536,108
24-Aug	153	235	136	114	349	285	278	218	204	298	248	393	283	228	192	270	219	169	223	302	443	568	445	233	6,486	542,594
Total	25,303	21,509	17,641	14,045	13,403	15,198	13,875	14,185	16,360	12,941	13,732	15,854	16,040	19,244	19,286	21,221	22,611	22,353	25,137	26,327	28,602	31,771	30,007	29,304	542,594	

Appendix A.4. Kenai River south bank sonar counts by hour, 2 July through 24 August 1994.

Counts by Hour																										
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
02-Jul	19	8	7	6	17	1	15	1	14	8	2	3	6	0	5	2	1	7	4	11	6	12	4	1	160	160
03-Jul	5	3	6	8	12	28	2	3	3	4	21	33	2	6	13	7	10	15	39	18	15	23	8	2	286	446
04-Jul	3	5	2	3	8	19	8	9	3	0	10	4	0	1	2	3	3	1	5	8	16	6	2	2	123	569
05-Jul	5	5	2	8	11	2	13	3	1	7	4	10	11	2	4	1	5	5	13	7	12	13	9	29	182	751
06-Jul	24	6	2	1	1	7	10	1	5	2	2	2	17	9	1	5	24	3	3	9	9	12	78	90	323	1,074
07-Jul	118	93	141	70	71	116	41	152	96	107	57	120	128	88	184	237	274	88	94	113	86	190	81	139	2,884	3,958
08-Jul	87	111	94	39	25	68	68	106	111	185	106	97	104	174	163	195	179	103	95	63	71	43	121	57	2,465	6,423
09-Jul	83	93	69	74	44	29	39	28	53	37	60	50	43	48	51	80	71	32	55	61	51	43	62	46	1,302	7,725
10-Jul	51	55	19	20	27	22	21	45	64	74	72	53	61	64	68	114	146	96	105	86	90	56	76	52	1,537	9,262
11-Jul	69	39	21	15	41	24	33	42	63	25	50	88	85	85	164	139	106	116	60	78	102	72	35	31	1,583	10,845
12-Jul	36	50	16	22	11	34	24	16	21	12	15	37	57	94	58	35	47	57	61	59	36	28	21	17	864	11,709
13-Jul	23	36	11	15	22	13	21	16	8	16	19	23	33	39	36	45	36	53	81	116	59	49	68	47	885	12,594
14-Jul	58	45	53	58	41	44	53	29	30	13	25	43	63	53	44	43	61	55	80	87	83	79	94	81	1,315	13,909
15-Jul	83	57	71	63	53	71	98	45	42	46	99	128	94	95	220	289	120	152	177	232	206	132	157	209	2,939	16,848
16-Jul	444	566	341	199	213	352	244	200	200	340	908	1,067	881	766	906	470	449	716	473	361	396	230	265	275	11,262	28,110
17-Jul	343	263	159	128	146	144	100	83	143	88	228	212	237	336	196	200	187	171	233	162	109	243	761	726	5,598	33,708
18-Jul	754	705	524	271	146	153	281	615	679	1,081	1,098	765	803	1,110	1,292	728	1,101	943	1,138	1,143	1,200	1,702	2,323	969	21,524	55,232
19-Jul	895	862	707	665	248	629	392	662	464	508	676	1,235	1,010	1,024	778	1,058	1,352	2,046	862	612	451	660	600	960	19,356	74,588
20-Jul	1,194	952	617	244	143	383	281	213	418	420	371	440	372	419	342	523	708	686	508	559	597	603	811	932	12,736	87,324
21-Jul	902	816	648	357	360	341	485	482	573	511	479	703	900	1,209	1,658	1,691	1,000	943	1,089	1,139	1,489	1,229	501	595	20,100	107,424
22-Jul	474	517	280	106	129	426	618	295	398	314	300	654	458	444	483	582	462	1,167	2,112	1,828	875	1,127	1,060	533	15,642	123,066
23-Jul	747	747	268	204	78	170	217	156	399	373	313	489	374	483	406	546	876	923	518	388	785	857	809	322	11,448	134,514
24-Jul	289	311	338	166	49	146	184	520	737	550	507	662	525	624	952	1,262	1,172	1,034	772	665	1,309	888	1,046	1,707	16,415	150,929
25-Jul	1,028	496	397	166	169	371	632	898	633	1,020	1,393	1,428	971	998	857	1,092	1,732	1,174	949	1,518	1,256	566	533	20,648	171,577	
26-Jul	353	239	241	56	58	166	394	425	483	412	224	353	237	232	261	346	441	601	621	536	294	318	210	161	7,662	179,239
27-Jul	154	88	100	101	109	85	105	77	90	109	88	74	112	130	121	151	153	132	231	251	254	222	198	93	3,228	182,467
28-Jul	109	137	151	76	67	24	58	69	85	96	64	72	50	39	65	111	109	122	125	135	111	136	230	232	2,473	184,940
29-Jul	134	137	119	104	75	104	103	100	86	87	57	71	64	119	110	171	181	172	165	182	155	203	361	333	3,393	188,333
30-Jul	432	521	367	151	136	125	117	139	139	70	132	113	165	188	192	432	283	197	263	472	388	174	164	256	5,616	193,949
31-Jul	510	708	437	120	213	175	94	149	195	74	34	62	203	279	305	300	449	398	630	573	785	1,349	1,062	384	9,488	203,437
01-Aug	737	948	442	271	412	430	488	1,059	1,593	1,003	600	1,113	1,967	1,724	656	870	762	1,983	1,734	1,008	769	450	1,229	1,837	24,085	227,522
02-Aug	1,835	1,865	1,244	683	997	943	1,201	1,578	1,343	1,427	1,444	2,174	3,099	2,274	1,374	1,949	2,403	4,374	4,336	3,657	3,116	3,608	3,670	1,313	51,907	279,429
03-Aug	1,083	1,593	1,108	579	513	739	948	821	1,034	637	858	1,147	1,408	827	1,239	1,246	737	1,592	1,368	1,274	689	619	989	1,019	24,067	303,496
04-Aug	836	540	415	359	217	351	457	556	522	467	495	349	521	528	298	439	435	447	564	454	364	538	931	764	11,847	315,343
05-Aug	386	273	201	121	58	170	377	329	357	436	331	227	284	297	269	518	764	612	608	802	891	1,098	883	661	10,953	326,296
06-Aug	509	432	374	273	293	224	328	281	192	164	115	139	220	179	270	304	283	454	605	524	711	601	615	896	8,986	335,282
07-Aug	580	252	355	265	181	161	349	253	205	149	142	79	81	93	170	117	208	292	440	522	501	527	671	376	6,969	342,251
08-Aug	144	48	54	39	71	92	210	105	98	78	65	59	74	94	126	140	172	209	233	340	315	358	398	291	3,813	346,064
09-Aug	161	203	109	167	77	177	248	187	138	90	26	52	84	109	162	134	263	347	279	390	393	437	229	355	4,817	350,881
10-Aug	240	143	129	119	122	135	222	277	218	79	176	174	307	340	488	478	448	407	593	724	714	681	657	503	8,374	359,255

-Continued-

Appendix A.4. (p. 2 of 2)

Counts by Hour																										
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
11-Aug	267	129	93	102	97	154	352	393	422	203	421	316	529	402	709	697	632	853	851	1,458	1,097	702	689	321	11,889	371,144
12-Aug	191	147	112	55	18	61	342	409	369	352	264	282	424	565	1,178	1,331	1,052	1,649	795	465	851	935	540	540	12,927	384,071
13-Aug	92	108	59	37	46	49	139	120	265	354	212	220	193	463	823	665	1,146	2,327	1,744	902	1,249	1,397	899	629	14,138	398,209
14-Aug	476	309	144	105	74	60	333	500	265	393	256	226	345	304	507	361	611	1,281	953	1,512	1,369	1,627	1,059	751	13,821	412,030
15-Aug	373	271	241	182	113	121	319	260	289	236	278	280	322	431	851	569	556	725	1,067	881	1,114	967	783	454	11,683	423,713
16-Aug	433	367	193	209	194	185	422	342	408	325	312	288	372	834	1,115	1,287	1,446	1,231	883	1,166	1,212	1,335	807	420	15,786	439,499
17-Aug	438	299	182	164	332	120	417	610	807	814	559	373	582	812	681	742	1,018	969	1,080	990	830	1,040	788	290	14,937	454,436
18-Aug	273	205	73	85	43	51	203	359	196	319	242	225	228	262	290	378	534	414	413	706	661	639	237	107	7,143	461,579
19-Aug	139	197	153	122	327	85	174	374	272	267	224	237	283	350	331	372	973	1,191	880	1,437	1,215	1,259	474	336	11,672	473,251
20-Aug	217	165	95	92	73	61	192	279	310	312	333	409	326	629	815	957	1,407	1,416	1,623	1,274	1,560	1,951	1,027	350	15,873	489,124
21-Aug	157	209	133	87	84	55	244	289	274	245	335	240	414	410	763	748	1,363	2,060	2,412	1,839	1,634	879	327	109	15,310	504,434
22-Aug	88	69	61	107	49	40	129	174	116	99	138	167	184	265	435	590	500	576	296	439	359	317	124	72	5,394	509,828
23-Aug	98	84	80	62	52	37	75	89	125	105	82	112	104	154	194	265	160	232	222	245	321	245	195	158	3,496	513,324
24-Aug	164	155	208	120	103	64	114	145	194	130	84	118	118	99	163	331	374	522	519	689	765	640	208	165	6,192	519,516
Total	19,343	17,682	12,466	7,921	7,269	8,837	12,773	15,102	16,513	14,866	15,033	18,062	20,992	21,576	23,985	26,111	29,345	38,929	36,284	34,601	34,258	34,805	30,212	22,531	519,516	

Appendix A.5. Kenai River north bank sonar counts by hour, 2 July through 24 August 1994. Counts expressed as percentage of daily total.

Date	Counts by Hour																								Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
02-Jul	8.4	10.6	12.8	9.5	9.1	5.8	8.4	4.0	6.6	5.5	8.4	5.8	0.0	0.0	0.0	0.0	1.8	2.9	0.0	0.0	0.0	0.0	0.0	0.4	100.0
03-Jul	0.0	24.4	22.0	2.4	7.3	2.4	0.0	9.8	0.0	0.0	0.0	0.0	0.0	7.3	2.4	0.0	4.9	0.0	4.9	0.0	2.4	4.9	4.9	4.9	100.0
04-Jul	1.1	2.2	0.4	3.7	1.7	2.6	1.7	4.1	0.2	2.0	1.3	5.9	11.5	2.4	11.5	3.5	3.3	3.5	2.6	2.6	5.7	8.5	5.7	12.2	99.9
05-Jul	3.7	5.3	5.2	6.3	4.4	4.9	11.1	1.8	5.1	3.7	5.7	4.0	1.6	4.0	4.2	5.7	3.3	3.3	3.6	1.3	1.8	2.9	4.5	3.1	100.5
06-Jul	5.9	3.4	3.8	5.6	8.8	8.7	8.3	6.2	7.5	8.3	4.1	1.0	0.3	1.3	0.3	0.3	1.3	0.8	2.3	0.8	6.0	6.4	3.9	4.6	99.9
07-Jul	1.4	8.8	3.2	3.7	0.6	2.2	2.6	4.6	4.4	6.4	4.9	2.6	6.6	6.4	3.8	1.3	4.2	1.9	4.3	5.7	6.7	3.7	5.7	4.1	99.8
08-Jul	8.8	1.4	2.9	3.1	3.7	4.2	6.3	3.4	5.3	4.3	7.3	7.0	4.4	5.5	1.5	3.1	3.1	3.0	4.4	4.2	3.9	1.7	2.6	4.7	99.8
09-Jul	4.2	12.2	10.5	9.1	1.8	4.2	5.3	1.6	2.3	1.7	3.7	4.2	2.6	4.5	3.8	2.0	4.4	6.2	1.1	2.8	4.0	2.2	1.4	4.2	100.0
10-Jul	3.6	5.6	7.6	1.6	2.5	2.1	1.6	2.3	2.9	2.9	4.0	5.0	4.7	5.0	4.3	7.2	2.9	6.4	6.3	2.1	4.9	2.5	5.5	6.6	100.1
11-Jul	4.1	4.3	1.5	1.1	2.5	1.9	1.3	3.4	10.3	4.0	3.4	6.6	4.4	3.9	5.7	3.5	3.9	5.2	5.4	5.3	5.3	3.6	7.2	2.1	99.9
12-Jul	3.0	5.9	3.8	5.2	5.6	3.1	10.6	5.4	2.7	4.4	6.7	3.7	4.8	5.7	3.4	3.8	2.5	4.4	5.7	0.6	3.4	2.3	0.5	2.9	100.1
13-Jul	2.0	0.5	2.9	7.7	4.2	3.8	3.0	1.3	5.5	3.9	5.3	5.3	8.0	6.2	4.2	7.0	9.7	3.5	2.6	3.2	2.0	1.7	3.4	3.0	99.9
14-Jul	4.5	1.6	5.0	5.7	7.0	4.2	2.6	4.7	6.1	4.9	2.8	5.8	6.1	2.5	4.4	2.4	3.3	3.1	1.8	2.8	3.1	3.0	4.3	8.1	99.8
15-Jul	1.6	3.9	2.5	3.1	4.7	2.1	1.5	3.5	3.3	2.5	3.3	2.2	2.3	1.8	1.4	1.7	1.9	4.9	6.5	6.1	2.9	3.7	12.9	19.8	100.1
16-Jul	4.4	5.9	5.2	3.1	2.9	4.1	4.2	2.6	4.2	1.5	2.6	4.2	4.2	7.0	4.3	4.0	4.0	4.5	4.2	4.2	7.0	6.3	3.9	2.1	100.6
17-Jul	8.2	4.3	2.6	3.2	2.2	7.5	5.5	4.2	3.3	2.0	1.7	0.7	1.0	0.7	0.5	0.4	0.3	0.6	0.8	1.2	8.5	10.8	14.4	15.2	99.8
18-Jul	2.0	1.7	1.7	1.6	1.8	2.2	2.3	0.8	1.1	0.5	4.5	5.3	6.7	6.0	5.3	6.8	6.2	6.1	6.1	5.8	5.2	5.5	5.0	9.8	100.0
19-Jul	7.9	3.8	3.8	2.1	2.7	4.0	3.6	5.7	3.5	2.4	2.1	3.8	3.9	5.2	5.5	5.4	4.0	6.1	6.0	4.8	5.0	4.0	2.6	2.3	100.2
20-Jul	4.1	5.3	3.1	0.3	0.2	0.8	2.1	2.8	2.5	2.2	2.6	2.5	5.4	6.5	5.3	5.8	6.7	7.6	7.2	6.3	5.6	7.3	6.5	1.7	100.4
21-Jul	2.3	1.9	2.4	1.4	1.5	1.7	3.5	2.8	3.8	1.7	2.0	2.8	2.6	2.0	3.3	4.1	7.4	5.3	6.7	7.3	7.6	13.2	7.4	5.4	100.1
22-Jul	3.2	0.8	0.4	3.1	2.9	3.8	2.3	2.8	3.7	2.9	1.7	3.4	3.0	3.9	5.8	5.5	6.9	4.6	7.0	6.2	6.2	7.1	6.7	6.1	100.0
23-Jul	3.8	1.6	2.3	2.4	2.7	3.4	1.7	2.1	3.6	3.6	2.1	2.4	2.9	2.8	2.6	5.8	4.7	5.7	7.7	7.1	8.2	5.5	6.1	9.3	100.1
24-Jul	4.9	4.6	5.0	4.5	3.4	3.6	1.9	4.2	3.7	3.2	2.4	2.3	3.3	2.2	1.6	2.0	4.4	6.0	7.0	6.7	5.8	6.6	6.1	4.7	100.1
25-Jul	5.8	5.8	6.6	5.1	4.3	4.8	2.5	3.7	3.9	3.4	2.4	3.3	2.9	4.2	3.8	4.2	3.7	4.5	5.3	3.3	1.7	4.0	5.1	5.4	99.7
26-Jul	12.3	7.4	7.3	6.6	8.8	7.2	7.7	2.8	3.4	2.5	3.3	2.4	1.9	1.3	1.0	1.1	2.4	3.3	2.4	3.6	4.1	2.6	2.4	2.1	99.9
27-Jul	6.7	4.9	7.5	4.5	3.4	3.5	1.7	1.7	4.2	2.3	2.5	1.6	2.5	4.9	4.3	5.2	7.8	4.2	7.0	4.8	2.8	3.9	4.8	3.2	99.9
28-Jul	4.6	6.4	7.9	4.7	3.7	2.5	2.5	2.8	3.4	4.1	3.4	3.4	4.1	3.1	4.4	2.1	2.0	1.8	2.3	3.2	11.6	7.6	4.1	4.1	99.8
29-Jul	3.0	6.9	4.2	4.8	6.2	6.1	4.0	3.0	7.7	5.3	2.0	4.2	2.6	3.4	3.2	3.3	1.7	2.7	2.7	2.2	3.4	4.5	6.6	6.5	100.2
30-Jul	10.1	11.9	6.4	3.4	2.4	1.7	0.9	0.9	0.9	1.2	2.4	0.9	3.7	5.2	4.3	4.1	2.4	3.7	3.5	3.6	4.4	4.7	8.2	9.5	100.4
31-Jul	5.4	4.5	3.5	1.8	0.7	1.4	0.8	0.7	1.3	2.7	2.8	2.7	1.5	3.5	3.8	5.3	4.6	1.9	5.0	7.1	4.7	6.5	15.0	12.6	99.8
01-Aug	1.7	1.9	1.0	0.4	1.0	0.7	0.9	1.3	2.2	1.7	2.5	2.1	3.5	5.4	7.7	7.5	7.3	5.9	5.3	7.2	7.8	8.3	7.6	9.0	99.9
02-Aug	5.5	4.0	2.7	1.5	1.6	1.4	1.2	1.8	2.8	1.8	2.6	3.9	3.4	5.2	5.2	5.5	5.7	4.8	5.0	6.7	6.5	6.2	6.2	8.7	99.9
03-Aug	11.3	9.8	4.5	2.9	2.2	3.0	2.2	3.0	5.0	3.5	3.8	3.8	2.1	3.3	3.0	3.3	3.3	3.0	3.8	4.6	5.9	4.9	4.5	3.3	100.0
04-Aug	9.4	7.4	4.0	3.0	2.1	2.4	1.6	2.0	2.4	1.7	2.7	2.3	3.1	3.5	3.2	2.0	2.7	3.9	5.8	6.0	6.8	8.4	7.2	6.4	100.0
05-Aug	5.2	3.3	4.0	2.4	1.6	2.3	2.9	1.5	1.5	3.8	1.5	2.0	1.5	2.5	2.8	4.1	6.6	7.2	4.6	6.4	5.9	7.2	11.8	7.6	100.2
06-Aug	7.8	7.0	7.4	2.1	4.3	3.3	2.7	2.3	1.9	1.9	3.8	1.8	1.8	1.9	0.9	3.0	2.7	3.4	4.3	5.1	6.5	14.4	5.7	4.0	100.0
07-Aug	7.1	6.4	4.1	2.0	4.2	6.6	7.9	4.2	5.3	2.7	1.9	1.7	2.2	1.4	1.5	1.6	2.5	2.0	2.3	2.4	3.4	9.6	10.9	6.1	100.0
08-Aug	7.6	7.5	4.0	3.3	2.4	3.1	3.5	2.7	2.2	1.5	1.5	0.8	1.7	1.5	2.7	2.4	2.4	2.4	2.6	2.6	8.3	12.8	12.3	8.2	100.0
09-Aug	8.1	6.4	4.6	4.8	3.5	4.4	4.7	2.9	3.3	3.3	2.3	2.2	1.4	1.6	1.9	2.4	3.7	3.1	6.0	7.9	7.9	5.2	5.2	3.1	99.9
10-Aug	4.1	3.4	3.4	3.3	1.7	2.3	1.9	1.4	1.8	3.2	2.6	2.2	3.7	3.2	3.1	4.1	5.0	5.3	7.1	6.4	7.2	9.4	8.0	6.0	99.8

-Continued-

Date	Counts by Hour																								Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
11-Aug	3.6	3.0	3.0	3.3	4.4	3.1	2.3	3.0	3.5	4.1	2.2	2.3	3.7	3.2	3.5	3.8	3.8	6.0	5.6	7.5	5.9	7.1	7.5	4.6	100.0
12-Aug	3.1	2.6	2.0	2.1	2.0	3.0	3.1	2.9	2.7	4.2	2.5	3.0	2.0	3.1	3.4	3.7	4.0	4.0	4.1	5.8	8.1	8.9	10.7	9.1	100.1
13-Aug	3.9	3.1	1.9	1.6	1.7	2.3	1.7	2.7	4.2	4.4	3.2	4.4	3.1	4.0	3.3	3.3	4.0	5.7	5.2	5.2	6.3	5.8	9.8	9.1	99.9
14-Aug	5.4	3.7	6.1	4.9	4.2	3.6	3.7	4.5	5.1	3.7	2.9	2.8	4.2	2.9	3.5	2.9	4.4	4.4	4.2	4.4	4.3	4.4	5.0	4.7	99.9
15-Aug	5.9	4.9	4.3	5.1	3.0	4.1	4.2	3.9	4.3	3.2	2.3	1.5	4.2	3.1	1.8	3.3	5.1	5.0	3.9	5.2	4.0	5.9	5.2	6.4	99.8
16-Aug	6.1	6.8	4.9	6.2	6.0	5.2	6.9	5.3	4.5	3.5	3.3	3.0	3.4	3.6	3.2	2.5	2.2	2.1	2.0	1.7	2.8	4.9	5.0	5.0	100.1
17-Aug	3.6	3.7	4.2	2.7	2.1	2.1	3.4	3.5	4.9	5.2	3.4	4.2	4.0	4.1	4.6	4.3	4.3	4.9	5.1	5.0	4.5	3.7	6.7	5.9	100.1
18-Aug	5.2	4.0	1.8	3.9	2.1	2.8	5.7	4.8	5.0	3.5	3.1	1.7	1.9	2.3	1.5	2.1	4.1	2.7	4.4	5.6	12.3	6.9	7.7	4.8	99.9
19-Aug	3.5	3.4	3.2	2.4	2.8	4.0	4.8	3.8	4.1	4.0	5.4	5.4	3.5	3.3	4.5	3.7	3.4	3.4	5.2	5.6	5.9	4.5	5.7	4.8	100.3
20-Aug	2.5	2.3	3.6	3.8	2.3	4.2	3.8	4.0	2.2	3.0	3.2	2.9	2.9	3.3	5.0	6.1	4.0	5.4	4.1	5.1	9.2	10.1	4.2	2.8	100.0
21-Aug	2.2	1.7	0.9	1.7	2.6	1.7	2.8	3.2	4.4	5.1	3.8	4.1	2.2	3.6	2.4	7.3	5.1	4.2	5.1	8.1	7.1	9.8	6.4	4.7	100.2
22-Aug	5.0	4.1	3.7	4.9	3.1	4.4	3.8	6.7	4.7	5.4	3.5	5.6	3.1	6.2	4.9	2.1	2.4	1.8	1.7	3.9	4.6	5.7	4.9	3.8	100.0
23-Aug	3.9	3.4	4.6	5.0	4.4	5.3	5.1	6.8	4.4	2.8	3.1	4.4	4.1	3.3	2.5	2.2	3.1	3.2	3.4	3.7	6.4	6.0	5.0	4.0	100.1
24-Aug	2.4	3.6	2.1	1.8	5.4	4.4	4.3	3.4	3.1	4.6	3.8	6.1	4.4	3.5	3.0	4.2	3.4	2.6	3.4	4.7	6.8	8.8	6.9	3.6	100.3
Total	5.1	4.3	3.6	2.9	2.8	3.1	2.9	3.0	3.4	2.8	2.8	3.2	3.3	3.9	3.9	4.3	4.6	4.6	5.1	5.5	5.9	6.5	6.4	6.1	100.0

Appendix A.6. Kenai River south bank sonar counts by hour, 2 July through 24 August 1994. Counts expressed as percentage of daily total.

Counts by Hour

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total
02-Jul	11.9	5.0	4.4	3.8	10.6	0.6	9.4	0.6	8.8	5.0	1.3	1.9	3.8	0.0	3.1	1.3	0.6	4.4	2.5	6.9	3.8	7.5	2.5	0.6	100.3
03-Jul	1.7	1.0	2.1	2.8	4.2	9.8	0.7	1.0	1.0	1.4	7.3	11.5	0.7	2.1	4.5	2.4	3.5	5.2	13.6	6.3	5.2	8.0	2.8	0.7	99.5
04-Jul	2.4	4.1	1.6	2.4	6.5	15.4	6.5	7.3	2.4	0.0	8.1	3.3	0.0	0.8	1.6	2.4	2.4	0.8	4.1	6.5	13.0	4.9	1.6	1.6	99.7
05-Jul	2.7	2.7	1.1	4.4	6.0	1.1	7.1	1.6	0.5	3.8	2.2	5.5	6.0	1.1	2.2	0.5	2.7	2.7	7.1	3.8	6.6	7.1	4.9	15.9	99.3
06-Jul	7.4	1.9	0.6	0.3	0.3	2.2	3.1	0.3	1.5	0.6	0.6	0.6	5.3	2.8	0.3	1.5	7.4	0.9	0.9	2.8	2.8	3.7	24.1	27.9	99.8
07-Jul	4.1	3.2	4.9	2.4	2.5	4.0	1.4	5.3	3.3	3.7	2.0	4.2	4.4	3.1	6.4	8.2	9.5	3.1	3.3	3.9	3.0	6.6	2.8	4.8	100.1
08-Jul	3.5	4.5	3.8	1.6	1.0	2.8	2.8	4.3	4.5	7.5	4.3	3.9	4.2	7.1	6.6	7.9	7.3	4.2	3.9	2.6	2.9	1.7	4.9	2.3	100.1
09-Jul	6.4	7.1	5.3	5.7	3.4	2.2	3.0	2.2	4.1	2.8	4.6	3.8	3.3	3.7	3.9	6.1	5.5	2.5	4.2	4.7	3.9	3.3	4.8	3.5	100.0
10-Jul	3.3	3.6	1.2	1.3	1.8	1.4	1.4	2.9	4.2	4.8	4.7	3.4	4.0	4.2	4.4	7.4	9.5	6.2	6.8	5.6	5.9	3.6	4.9	3.4	99.9
11-Jul	4.4	2.5	1.3	0.9	2.6	1.5	2.1	2.7	4.0	1.6	3.2	5.6	5.4	5.4	10.4	8.8	6.7	7.3	3.8	4.9	6.4	4.5	2.2	2.0	100.2
12-Jul	4.2	5.8	1.9	2.5	1.3	3.9	2.8	1.9	2.4	1.4	1.7	4.3	6.6	10.9	6.7	4.1	5.4	6.6	7.1	6.8	4.2	3.2	2.4	2.0	100.1
13-Jul	2.6	4.1	1.2	1.7	2.5	1.5	2.4	1.8	0.9	1.8	2.1	2.6	3.7	4.4	4.1	5.1	4.1	6.0	9.2	13.1	6.7	5.5	7.7	5.3	100.1
14-Jul	4.4	3.4	4.0	4.4	3.1	3.3	4.0	2.2	2.3	1.0	1.9	3.3	4.8	4.0	3.3	3.3	4.6	4.2	6.1	6.6	6.3	6.0	7.1	6.2	99.8
15-Jul	2.8	1.9	2.4	2.1	1.8	2.4	3.3	1.5	1.4	1.6	3.4	4.4	3.2	3.2	7.5	9.8	4.1	5.2	6.0	7.9	7.0	4.5	5.3	7.1	99.8
16-Jul	3.9	5.0	3.0	1.8	1.9	3.1	2.2	1.8	1.8	3.0	8.1	9.5	7.8	6.8	8.0	4.2	4.0	6.4	4.2	3.2	3.5	2.0	2.4	2.4	100.0
17-Jul	6.1	4.7	2.8	2.3	2.6	2.6	1.8	1.5	2.6	1.6	4.1	3.8	4.2	6.0	3.5	3.6	3.3	3.1	4.2	2.9	1.9	4.3	13.6	13.0	100.1
18-Jul	3.5	3.3	2.4	1.3	0.7	0.7	1.3	2.9	3.2	5.0	5.1	3.6	3.7	5.2	6.0	3.4	5.1	4.4	5.3	5.3	5.6	7.9	10.8	4.5	100.2
19-Jul	4.6	4.5	3.7	3.4	1.3	3.2	2.0	3.4	2.4	2.6	3.5	6.4	5.2	5.3	4.0	5.5	7.0	10.6	4.5	3.2	2.3	3.4	3.1	5.0	100.1
20-Jul	9.4	7.5	4.8	1.9	1.1	3.0	2.2	1.7	3.3	3.3	2.9	3.5	2.9	3.3	2.7	4.1	5.6	5.4	4.0	4.4	4.7	4.7	6.4	7.3	100.1
21-Jul	4.5	4.1	3.2	1.8	1.8	1.7	2.4	2.4	2.9	2.5	2.4	3.5	4.5	6.0	8.2	8.4	5.0	4.7	5.4	5.7	7.4	6.1	2.5	3.0	100.1
22-Jul	3.0	3.3	1.8	0.7	0.8	2.7	4.0	1.9	2.5	2.0	1.9	4.2	2.9	2.8	3.1	3.7	3.0	7.5	13.5	11.7	5.6	7.2	6.8	3.4	100.0
23-Jul	6.5	6.5	2.3	1.8	0.7	1.5	1.9	1.4	3.5	3.3	2.7	4.3	3.3	4.2	3.5	4.8	7.7	8.1	4.5	3.4	6.9	7.5	7.1	2.8	100.2
24-Jul	1.8	1.9	2.1	1.0	0.3	0.9	1.1	3.2	4.5	3.4	3.1	4.0	3.2	3.8	5.8	7.7	7.1	6.3	4.7	4.1	8.0	5.4	6.4	10.4	100.2
25-Jul	5.0	2.4	1.9	0.8	0.8	1.8	1.8	3.1	4.3	3.1	4.9	6.7	6.9	4.7	4.8	4.2	5.3	8.4	5.7	4.6	7.4	6.1	2.7	2.6	100.0
26-Jul	4.6	3.1	3.1	0.7	0.8	2.2	5.1	5.5	6.3	5.4	2.9	4.6	3.1	3.0	3.4	4.5	5.8	7.8	8.1	7.0	3.8	4.2	2.7	2.1	99.8
27-Jul	4.8	2.7	3.1	3.1	3.4	2.6	3.3	2.4	2.8	3.4	2.7	2.3	3.5	4.0	3.7	4.7	4.7	4.1	7.2	7.8	7.9	6.9	6.1	2.9	100.1
28-Jul	4.4	5.5	6.1	3.1	2.7	1.0	2.3	2.8	3.4	3.9	2.6	2.9	2.0	1.6	2.6	4.5	4.4	4.9	5.1	5.5	4.5	5.5	9.3	9.4	100.0
29-Jul	3.9	4.0	3.5	3.1	2.2	3.1	3.0	2.9	2.5	2.6	1.7	2.1	1.9	3.5	3.2	5.0	5.3	5.1	4.9	5.4	4.6	6.0	10.6	9.8	99.9
30-Jul	7.7	9.3	6.5	2.7	2.4	2.2	2.1	2.5	2.5	1.2	2.4	2.0	2.9	3.3	3.4	7.7	5.0	3.5	4.7	8.4	6.9	3.1	2.9	4.6	99.9
31-Jul	5.4	7.5	4.6	1.3	2.2	1.8	1.0	1.6	2.1	0.8	0.4	0.7	2.1	2.9	3.2	3.2	4.7	4.2	6.6	6.0	8.3	14.2	11.2	4.0	100.0
01-Aug	3.1	3.9	1.8	1.1	1.7	1.8	2.0	4.4	6.6	4.2	2.5	4.6	8.2	7.2	2.7	3.6	3.2	8.2	7.2	4.2	3.2	1.9	5.1	7.6	100.0
02-Aug	3.5	3.6	2.4	1.3	1.9	1.8	2.3	3.0	2.6	2.7	2.8	4.2	6.0	4.4	2.6	3.8	4.6	8.4	8.4	7.0	6.0	7.0	7.1	2.5	99.9
03-Aug	4.5	6.6	4.6	2.4	2.1	3.1	3.9	3.4	4.3	2.6	3.6	4.8	5.9	3.4	5.1	5.2	3.1	6.6	5.7	5.3	2.9	2.6	4.1	4.2	100.0
04-Aug	7.1	4.6	3.5	3.0	1.8	3.0	3.9	4.7	4.4	3.9	4.2	2.9	4.4	4.5	2.5	3.7	3.7	3.8	4.8	3.8	3.1	4.5	7.9	6.4	100.1
05-Aug	3.5	2.5	1.8	1.1	0.5	1.6	3.4	3.0	3.3	4.0	3.0	2.1	2.6	2.7	2.5	4.7	7.0	5.6	5.6	7.3	8.1	10.0	8.1	6.0	100.0
06-Aug	5.7	4.8	4.2	3.0	3.3	2.5	3.7	3.1	2.1	1.8	1.3	1.5	2.4	2.0	3.0	3.4	3.1	5.1	6.7	5.8	7.9	6.7	6.8	10.0	99.9
07-Aug	8.3	3.6	5.1	3.8	2.6	2.3	5.0	3.6	2.9	2.1	2.0	1.1	1.2	1.3	2.4	1.7	3.0	4.2	6.3	7.5	7.2	7.6	9.6	5.4	99.8
08-Aug	3.8	1.3	1.4	1.0	1.9	2.4	5.5	2.8	2.6	2.0	1.7	1.5	1.9	2.5	3.3	3.7	4.5	5.5	6.1	8.9	8.3	9.4	10.4	7.6	100.0
09-Aug	3.3	4.2	2.3	3.5	1.6	3.7	5.1	3.9	2.9	1.9	0.5	1.1	1.7	2.3	3.4	2.8	5.5	7.2	5.8	8.1	8.2	9.1	4.8	7.4	100.3
10-Aug	2.9	1.7	1.5	1.4	1.5	1.6	2.7	3.3	2.6	0.9	2.1	2.1	3.7	4.1	5.8	5.7	5.3	4.9	7.1	8.6	8.5	8.1	7.8	6.0	99.9

-Continued-

Counts by Hour

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total
11-Aug	2.2	1.1	0.8	0.9	0.8	1.3	3.0	3.3	3.5	1.7	3.5	2.7	4.4	3.4	6.0	5.9	5.3	7.2	7.2	12.3	9.2	5.9	5.8	2.7	100.1
12-Aug	1.5	1.1	0.9	0.4	0.1	0.5	2.6	3.2	2.9	2.7	2.0	2.2	3.3	4.4	9.1	10.3	8.1	12.8	6.1	3.6	6.6	7.2	4.2	4.2	100.0
13-Aug	0.7	0.8	0.4	0.3	0.3	0.3	1.0	0.8	1.9	2.5	1.5	1.6	1.4	3.3	5.8	4.7	8.1	16.5	12.3	6.4	8.8	9.9	6.4	4.4	100.1
14-Aug	3.4	2.2	1.0	0.8	0.5	0.4	2.4	3.6	1.9	2.8	1.9	1.6	2.5	2.2	3.7	2.6	4.4	9.3	6.9	10.9	9.9	11.8	7.7	5.4	99.8
15-Aug	3.2	2.3	2.1	1.6	1.0	1.0	2.7	2.2	2.5	2.0	2.4	2.4	2.8	3.7	7.3	4.9	4.8	6.2	9.1	7.5	9.5	8.3	6.7	3.9	100.1
16-Aug	2.7	2.3	1.2	1.3	1.2	1.2	2.7	2.2	2.6	2.1	2.0	1.8	2.4	5.3	7.1	8.2	9.2	7.8	5.6	7.4	7.7	8.5	5.1	2.7	100.3
17-Aug	2.9	2.0	1.2	1.1	2.2	0.8	2.8	4.1	5.4	5.4	3.7	2.5	3.9	5.4	4.6	5.0	6.8	6.5	7.2	6.6	5.6	7.0	5.3	1.9	99.9
18-Aug	3.8	2.9	1.0	1.2	0.6	0.7	2.8	5.0	2.7	4.5	3.4	3.1	3.2	3.7	4.1	5.3	7.5	5.8	5.8	9.9	9.3	8.9	3.3	1.5	100.0
19-Aug	1.2	1.7	1.3	1.0	2.8	0.7	1.5	3.2	2.3	2.3	1.9	2.0	2.4	3.0	2.8	3.2	8.3	10.2	7.5	12.3	10.4	10.8	4.1	2.9	99.8
20-Aug	1.4	1.0	0.6	0.6	0.5	0.4	1.2	1.8	2.0	2.0	2.1	2.6	2.1	4.0	5.1	6.0	8.9	8.9	10.2	8.0	9.8	12.3	6.5	2.2	100.2
21-Aug	1.0	1.4	0.9	0.6	0.5	0.4	1.6	1.9	1.8	1.6	2.2	1.6	2.7	2.7	5.0	4.9	8.9	13.5	15.8	12.0	10.7	5.7	2.1	0.7	100.2
22-Aug	1.6	1.3	1.1	2.0	0.9	0.7	2.4	3.2	2.2	1.8	2.6	3.1	3.4	4.9	8.1	10.9	9.3	10.7	5.5	8.1	6.7	5.9	2.3	1.3	100.0
23-Aug	2.8	2.4	2.3	1.8	1.5	1.1	2.1	2.5	3.6	3.0	2.3	3.2	3.0	4.4	5.5	7.6	4.6	6.6	6.4	7.0	9.2	7.0	5.6	4.5	100.0
24-Aug	2.6	2.5	3.4	1.9	1.7	1.0	1.8	2.3	3.1	2.1	1.4	1.9	1.9	1.6	2.6	5.3	6.0	8.4	8.4	11.1	12.4	10.3	3.4	2.7	99.8
Total	3.7	3.4	2.4	1.5	1.4	1.7	2.5	2.9	3.2	2.9	2.9	3.5	4.0	4.2	4.6	5.0	5.6	7.5	7.0	6.7	6.6	6.7	5.8	4.3	100.0

Appendix A.7. Kenai River north bank sonar counts by sector, 2 July through 24 August 1994.

Counts by Sector													Daily Total	Cum Total
Date	1	2	3	4	5	6	7	8	9	10	11	12		
02-Jul	0	18	17	39	42	12	24	16	33	19	28	26	274	274
03-Jul	0	0	0	1	7	17	0	0	0	0	3	13	41	315
04-Jul	0	0	5	6	21	58	53	22	53	61	75	105	459	774
05-Jul	3	8	25	28	37	42	126	120	167	127	162	161	1,006	1,780
06-Jul	1	0	2	10	15	11	51	85	121	109	95	112	612	2,392
07-Jul	64	187	86	67	115	89	92	257	252	121	91	75	1,496	3,888
08-Jul	24	98	141	75	111	64	37	204	268	188	101	60	1,371	5,259
09-Jul	263	128	159	63	105	176	147	63	111	62	71	68	1,416	6,675
10-Jul	140	147	37	88	69	183	169	95	33	28	53	38	1,080	7,755
11-Jul	56	151	133	147	218	273	293	216	46	31	75	49	1,688	9,443
12-Jul	25	188	337	277	118	36	59	200	88	39	76	89	1,532	10,975
13-Jul	12	36	148	140	134	50	165	130	142	25	41	115	1,138	12,113
14-Jul	63	117	193	126	71	10	48	109	141	33	24	87	1,022	13,135
15-Jul	1,008	1,246	1,599	569	135	28	30	52	58	43	59	81	4,908	18,043
16-Jul	5,988	2,530	3,176	2,857	1,987	1,183	344	311	241	236	516	235	19,604	37,647
17-Jul	42	98	1,769	1,461	304	303	258	138	58	159	151	101	4,842	42,489
18-Jul	1,814	8,266	13,984	2,801	266	194	168	126	93	236	274	90	28,312	70,801
19-Jul	1,330	5,464	6,196	5,417	1,432	976	539	207	81	155	202	279	22,278	93,079
20-Jul	81	2,973	2,139	5,280	1,832	632	285	190	104	61	46	80	13,703	106,782
21-Jul	74	2,662	3,690	11,347	3,779	894	157	124	68	59	50	128	23,032	129,814
22-Jul	345	9,180	3,011	4,540	2,517	563	418	302	189	129	109	110	21,413	151,227
23-Jul	2,066	9,627	3,532	1,936	593	96	24	6	3	2	0	30	17,915	169,142
24-Jul	2,358	15,796	3,900	4,678	1,654	365	39	8	7	2	0	0	28,807	197,949
25-Jul	1,794	13,804	8,496	7,151	2,299	405	285	298	127	146	136	183	35,124	233,073
26-Jul	6	246	810	2,668	4,077	2,353	670	764	553	261	272	357	13,037	246,110
27-Jul	72	211	922	791	628	361	541	358	185	191	263	328	4,851	250,961
28-Jul	71	342	304	220	141	219	222	189	164	170	151	126	2,319	253,280
29-Jul	31	486	484	542	275	351	392	436	359	490	354	267	4,467	257,747
30-Jul	30	1,208	827	385	123	133	272	250	372	323	206	190	4,319	262,066
31-Jul	11	2,779	2,156	1,968	811	676	335	297	235	278	210	249	10,005	272,071
01-Aug	38	21,478	7,890	1,234	196	156	73	37	39	63	35	58	31,297	303,368
02-Aug	22	24,872	16,757	1,414	117	127	60	53	16	22	32	74	43,566	346,934
03-Aug	5	11,602	14,270	2,425	276	228	138	75	40	34	46	68	29,207	376,141
04-Aug	328	4,933	4,648	1,213	392	507	179	147	102	73	94	104	12,720	388,861
05-Aug	32	1,864	2,063	1,043	372	228	289	188	178	187	120	97	6,661	395,522
06-Aug	252	2,260	1,360	893	392	85	200	77	114	123	73	92	5,921	401,443
07-Aug	193	2,820	1,518	484	246	86	76	53	55	57	26	52	5,666	407,109
08-Aug	31	2,185	465	397	218	285	213	160	137	161	125	121	4,498	411,607
09-Aug	148	2,821	506	517	131	64	111	145	92	88	94	248	4,965	416,572
10-Aug	434	3,213	714	634	319	52	36	115	28	49	84	168	5,846	422,418
11-Aug	243	3,471	2,625	3,884	880	412	378	222	215	178	244	352	13,104	435,522
12-Aug	194	3,440	2,043	3,800	1,099	650	824	416	260	338	385	254	13,703	449,225
13-Aug	433	3,062	1,732	2,794	745	529	648	425	602	352	356	180	11,858	461,083
14-Aug	510	1,645	1,952	1,535	1,191	596	666	571	434	377	491	374	10,342	471,425
15-Aug	335	2,351	1,389	670	360	328	414	407	384	264	279	457	7,638	479,063
16-Aug	168	3,780	1,633	670	244	205	395	328	221	217	225	309	8,395	487,458
17-Aug	303	2,144	1,170	751	348	231	350	201	231	229	308	294	6,560	494,018
18-Aug	305	1,365	1,049	824	549	279	395	453	302	310	348	388	6,567	500,585
19-Aug	842	1,960	1,249	397	263	893	655	301	90	197	262	279	7,388	507,973
20-Aug	483	1,974	2,036	1,461	1,112	378	330	319	462	93	207	254	9,109	517,082
21-Aug	227	1,326	1,701	1,236	635	247	291	303	245	141	173	202	6,727	523,809
22-Aug	328	625	1,232	1,028	651	253	192	435	598	252	439	476	6,509	530,318
23-Aug	55	327	996	997	547	455	265	378	565	278	369	558	5,790	536,108
24-Aug	24	194	936	1,188	664	737	374	728	550	339	389	363	6,486	542,594
Total	23,705	183,708	130,212	87,167	35,863	18,764	13,795	12,110	10,312	8,206	9,098	9,654	542,594	

Appendix A.8. Kenai River south bank sonar counts by sector, 2 July through 24 August 1994.

Counts by Sector													Daily Total	Cum Total
Date	1	2	3	4	5	6	7	8	9	10	11	12		
02-Jul	134	12	14	0	0	0	0	0	0	0	0	0	160	160
03-Jul	265	14	4	2	1	0	0	0	0	0	0	0	286	446
04-Jul	103	7	1	3	1	0	0	3	2	0	1	2	123	569
05-Jul	57	25	19	7	12	3	0	0	1	3	26	29	182	751
06-Jul	66	16	13	36	44	34	36	16	9	2	19	32	323	1,074
07-Jul	272	119	200	618	456	355	477	269	63	21	10	24	2,884	3,958
08-Jul	160	81	146	574	410	311	441	212	76	22	8	24	2,465	6,423
09-Jul	141	75	97	299	203	125	186	111	39	8	3	15	1,302	7,725
10-Jul	118	45	109	362	224	148	263	158	58	18	12	22	1,537	9,262
11-Jul	111	33	92	296	229	218	344	118	44	11	21	64	1,583	10,845
12-Jul	128	39	71	170	99	117	114	20	19	6	19	62	864	11,709
13-Jul	110	21	71	195	97	117	105	38	18	11	14	88	885	12,594
14-Jul	200	76	138	270	170	159	150	65	24	3	18	42	1,315	13,909
15-Jul	465	346	427	748	374	224	175	73	37	3	12	55	2,939	16,848
16-Jul	1,939	1,268	1,375	2,698	1,613	846	836	371	166	20	21	109	11,262	28,110
17-Jul	635	513	678	1,260	728	566	610	308	145	11	23	121	5,598	33,708
18-Jul	3,995	3,528	3,190	5,117	2,659	1,079	897	503	252	21	41	242	21,524	55,232
19-Jul	3,099	3,020	3,400	4,872	2,470	1,021	713	322	159	17	23	240	19,356	74,588
20-Jul	2,287	1,683	1,808	2,866	1,422	834	941	381	222	28	37	227	12,736	87,324
21-Jul	4,339	3,189	3,302	4,848	2,120	814	678	298	153	22	43	294	20,100	107,424
22-Jul	5,866	2,168	1,756	2,400	1,398	597	711	372	187	24	32	131	15,642	123,066
23-Jul	2,962	1,361	1,565	2,773	1,392	574	470	143	81	33	20	74	11,448	134,514
24-Jul	2,100	2,119	1,647	1,887	3,807	3,276	658	300	226	172	177	46	16,415	150,929
25-Jul	5,158	3,405	1,984	2,208	3,861	2,802	622	242	161	93	79	33	20,648	171,577
26-Jul	2,458	1,135	599	1,015	1,336	676	228	72	55	37	36	15	7,662	179,239
27-Jul	750	312	498	945	348	127	101	70	21	18	10	28	3,228	182,467
28-Jul	557	225	341	699	287	127	87	54	15	18	30	33	2,473	184,940
29-Jul	704	344	452	1,033	373	141	133	70	40	37	27	39	3,393	188,333
30-Jul	1,725	799	532	1,427	663	178	80	65	17	82	17	31	5,616	193,949
31-Jul	3,210	1,531	1,127	1,942	860	253	150	92	109	151	24	39	9,488	203,437
01-Aug	8,628	4,942	2,193	2,354	2,923	1,669	552	289	190	201	62	82	24,085	227,522
02-Aug	20,952	10,446	5,554	3,360	5,556	3,684	1,172	521	302	197	76	87	51,907	279,429
03-Aug	9,980	3,737	2,403	1,446	2,960	2,324	635	246	160	69	81	26	24,067	303,496
04-Aug	4,839	1,618	1,047	2,442	913	344	185	84	127	53	102	93	11,847	315,343
05-Aug	3,107	1,469	699	2,551	1,928	574	234	126	35	107	50	73	10,953	326,296
06-Aug	2,570	1,043	564	1,024	1,683	1,276	309	199	76	101	48	93	8,986	335,282
07-Aug	2,249	921	337	450	1,332	1,041	214	147	82	33	14	149	6,969	342,251
08-Aug	1,398	445	226	278	552	447	157	76	40	17	17	160	3,813	346,064
09-Aug	1,707	572	457	346	709	561	139	86	59	52	34	95	4,817	350,881
10-Aug	3,695	1,088	565	580	1,009	785	190	133	96	88	48	97	8,374	359,255
11-Aug	3,893	1,494	722	903	1,916	1,847	424	310	177	73	46	84	11,889	371,144
12-Aug	2,360	1,565	999	1,404	2,355	2,291	688	505	260	94	115	291	12,927	384,071
13-Aug	4,531	1,803	1,203	1,970	1,804	980	625	427	85	51	156	503	14,138	398,209
14-Aug	5,473	1,931	818	1,439	1,692	728	670	395	101	47	137	390	13,821	412,030
15-Aug	4,982	1,540	550	1,190	1,394	608	536	425	86	43	119	210	11,683	423,713
16-Aug	7,033	2,892	906	1,191	1,607	637	501	431	100	36	103	349	15,786	439,499
17-Aug	5,427	2,745	908	1,236	2,070	803	642	481	137	47	106	335	14,937	454,436
18-Aug	1,439	833	381	943	1,443	611	525	416	104	38	110	300	7,143	461,579
19-Aug	3,943	1,718	717	1,335	1,690	729	587	434	109	41	87	282	11,672	473,251
20-Aug	3,188	1,738	727	1,926	3,304	1,339	1,489	1,198	483	64	97	320	15,873	489,124
21-Aug	3,219	2,277	910	2,300	2,979	1,129	1,047	711	238	36	79	385	15,310	504,434
22-Aug	680	407	244	996	1,297	517	481	362	121	28	59	202	5,394	509,828
23-Aug	447	232	173	691	799	267	272	220	104	35	69	187	3,496	513,324
24-Aug	1,443	798	337	1,044	1,245	408	287	225	82	32	47	244	6,192	519,516
Total	151,297	75,763	49,296	74,971	72,817	41,321	22,767	13,193	5,753	2,475	2,665	7,198	519,516	

Appendix A.9. Kenai River north bank sonar counts by sector, 2 July through 24 August 1994. Counts expressed as percentage of daily total.

Date	Counts by Sector												Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	
02-Jul	0.0	6.6	6.2	14.2	15.3	4.4	8.8	5.8	12.0	6.9	10.2	9.5	99.9
03-Jul	0.0	0.0	0.0	2.4	17.1	41.5	0.0	0.0	0.0	0.0	7.3	31.7	100.0
04-Jul	0.0	0.0	1.1	1.3	4.6	12.6	11.5	4.8	11.5	13.3	16.3	22.9	99.9
05-Jul	0.3	0.8	2.5	2.8	3.7	4.2	12.5	11.9	16.6	12.6	16.1	16.0	100.0
06-Jul	0.2	0.0	0.3	1.6	2.5	1.8	8.3	13.9	19.8	17.8	15.5	18.3	100.0
07-Jul	4.3	12.5	5.7	4.5	7.7	5.9	6.1	17.2	16.8	8.1	6.1	5.0	99.9
08-Jul	1.8	7.1	10.3	5.5	8.1	4.7	2.7	14.9	19.5	13.7	7.4	4.4	100.1
09-Jul	18.6	9.0	11.2	4.4	7.4	12.4	10.4	4.4	7.8	4.4	5.0	4.8	99.8
10-Jul	13.0	13.6	3.4	8.1	6.4	16.9	15.6	8.8	3.1	2.6	4.9	3.5	99.9
11-Jul	3.3	8.9	7.9	8.7	12.9	16.2	17.4	12.8	2.7	1.8	4.4	2.9	99.9
12-Jul	1.6	12.3	22.0	18.1	7.7	2.3	3.9	13.1	5.7	2.5	5.0	5.8	100.0
13-Jul	1.1	3.2	13.0	12.3	11.8	4.4	14.5	11.4	12.5	2.2	3.6	10.1	100.1
14-Jul	6.2	11.4	18.9	12.3	6.9	1.0	4.7	10.7	13.8	3.2	2.3	8.5	99.9
15-Jul	20.5	25.4	32.6	11.6	2.8	0.6	0.6	1.1	1.2	0.9	1.2	1.7	100.2
16-Jul	30.5	12.9	16.2	14.6	10.1	6.0	1.8	1.6	1.2	1.2	2.6	1.2	99.9
17-Jul	0.9	2.0	36.5	30.2	6.3	6.3	5.3	2.9	1.2	3.3	3.1	2.1	100.1
18-Jul	6.4	29.2	49.4	9.9	0.9	0.7	0.6	0.4	0.3	0.8	1.0	0.3	99.9
19-Jul	6.0	24.5	27.8	24.3	6.4	4.4	2.4	0.9	0.4	0.7	0.9	1.3	100.0
20-Jul	0.6	21.7	15.6	38.5	13.4	4.6	2.1	1.4	0.8	0.4	0.3	0.6	100.0
21-Jul	0.3	11.6	16.0	49.3	16.4	3.9	0.7	0.5	0.3	0.3	0.2	0.6	100.1
22-Jul	1.6	42.9	14.1	21.2	11.8	2.6	2.0	1.4	0.9	0.6	0.5	0.5	100.1
23-Jul	11.5	53.7	19.7	10.8	3.3	0.5	0.1	0.0	0.0	0.0	0.0	0.2	99.8
24-Jul	8.2	54.8	13.5	16.2	5.7	1.3	0.1	0.0	0.0	0.0	0.0	0.0	99.8
25-Jul	5.1	39.3	24.2	20.4	6.5	1.2	0.8	0.8	0.4	0.4	0.4	0.5	100.0
26-Jul	0.0	1.9	6.2	20.5	31.3	18.0	5.1	5.9	4.2	2.0	2.1	2.7	99.9
27-Jul	1.5	4.3	19.0	16.3	12.9	7.4	11.2	7.4	3.8	3.9	5.4	6.8	99.9
28-Jul	3.1	14.7	13.1	9.5	6.1	9.4	9.6	8.2	7.1	7.3	6.5	5.4	100.0
29-Jul	0.7	10.9	10.8	12.1	6.2	7.9	8.8	9.8	8.0	11.0	7.9	6.0	100.1
30-Jul	0.7	28.0	19.1	8.9	2.8	3.1	6.3	5.8	8.6	7.5	4.8	4.4	100.0
31-Jul	0.1	27.8	21.5	19.7	8.1	6.8	3.3	3.0	2.3	2.8	2.1	2.5	100.0
01-Aug	0.1	68.6	25.2	3.9	0.6	0.5	0.2	0.1	0.1	0.2	0.1	0.2	99.8
02-Aug	0.1	57.1	38.5	3.2	0.3	0.3	0.1	0.1	0.0	0.1	0.1	0.2	100.1
03-Aug	0.0	39.7	48.9	8.3	0.9	0.8	0.5	0.3	0.1	0.1	0.2	0.2	100.0
04-Aug	2.6	38.8	36.5	9.5	3.1	4.0	1.4	1.2	0.8	0.6	0.7	0.8	100.0
05-Aug	0.5	28.0	31.0	15.7	5.6	3.4	4.3	2.8	2.7	2.8	1.8	1.5	100.1
06-Aug	4.3	38.2	23.0	15.1	6.6	1.4	3.4	1.3	1.9	2.1	1.2	1.6	100.1
07-Aug	3.4	49.8	26.8	8.5	4.3	1.5	1.3	0.9	1.0	1.0	0.5	0.9	99.9
08-Aug	0.7	48.6	10.3	8.8	4.8	6.3	4.7	3.6	3.0	3.6	2.8	2.7	99.9
09-Aug	3.0	56.8	10.2	10.4	2.6	1.3	2.2	2.9	1.9	1.8	1.9	5.0	100.0
10-Aug	7.4	55.0	12.2	10.8	5.5	0.9	0.6	2.0	0.5	0.8	1.4	2.9	100.0
11-Aug	1.9	26.5	20.0	29.6	6.7	3.1	2.9	1.7	1.6	1.4	1.9	2.7	100.0
12-Aug	1.4	25.1	14.9	27.7	8.0	4.7	6.0	3.0	1.9	2.5	2.8	1.9	99.9
13-Aug	3.7	25.8	14.6	23.6	6.3	4.5	5.5	3.6	5.1	3.0	3.0	1.5	100.2
14-Aug	4.9	15.9	18.9	14.8	11.5	5.8	6.4	5.5	4.2	3.6	4.7	3.6	99.8
15-Aug	4.4	30.8	18.2	8.8	4.7	4.3	5.4	5.3	5.0	3.5	3.7	6.0	100.1
16-Aug	2.0	45.0	19.5	8.0	2.9	2.4	4.7	3.9	2.6	2.6	2.7	3.7	100.0
17-Aug	4.6	32.7	17.8	11.4	5.3	3.5	5.3	3.1	3.5	3.5	4.7	4.5	99.9
18-Aug	4.6	20.8	16.0	12.5	8.4	4.2	6.0	6.9	4.6	4.7	5.3	5.9	99.9
19-Aug	11.4	26.5	16.9	5.4	3.6	12.1	8.9	4.1	1.2	2.7	3.5	3.8	100.1
20-Aug	5.3	21.7	22.4	16.0	12.2	4.1	3.6	3.5	5.1	1.0	2.3	2.8	100.0
21-Aug	3.4	19.7	25.3	18.4	9.4	3.7	4.3	4.5	3.6	2.1	2.6	3.0	100.0
22-Aug	5.0	9.6	18.9	15.8	10.0	3.9	2.9	6.7	9.2	3.9	6.7	7.3	99.9
23-Aug	0.9	5.6	17.2	17.2	9.4	7.9	4.6	6.5	9.8	4.8	6.4	9.6	99.9
24-Aug	0.4	3.0	14.4	18.3	10.2	11.4	5.8	11.2	8.5	5.2	6.0	5.6	100.0
Total	4.4	33.9	24.0	16.1	6.6	3.5	2.5	2.2	1.9	1.5	1.7	1.8	100.1

Appendix A.10. Kenai River south bank sonar counts by sector, 2 July through 24 August 1994. Counts expressed as percentage of daily total.

Date	Counts by Sector												Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	
02-Jul	83.8	7.5	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.1
03-Jul	92.7	4.9	1.4	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
04-Jul	83.7	5.7	0.8	2.4	0.8	0.0	0.0	2.4	1.6	0.0	0.8	1.6	99.8
05-Jul	31.3	13.7	10.4	3.8	6.6	1.6	0.0	0.0	0.5	1.6	14.3	15.9	99.7
06-Jul	20.4	5.0	4.0	11.1	13.6	10.5	11.1	5.0	2.8	0.6	5.9	9.9	99.9
07-Jul	9.4	4.1	6.9	21.4	15.8	12.3	16.5	9.3	2.2	0.7	0.3	0.8	99.7
08-Jul	6.5	3.3	5.9	23.3	16.6	12.6	17.9	8.6	3.1	0.9	0.3	1.0	100.0
09-Jul	10.8	5.8	7.5	23.0	15.6	9.6	14.3	8.5	3.0	0.6	0.2	1.2	100.1
10-Jul	7.7	2.9	7.1	23.6	14.6	9.6	17.1	10.3	3.8	1.2	0.8	1.4	100.1
11-Jul	7.0	2.1	5.8	18.8	14.5	13.8	21.7	7.5	2.8	0.7	1.3	4.0	100.0
12-Jul	14.8	4.5	8.2	19.7	11.5	13.5	13.2	2.3	2.2	0.7	2.2	7.2	100.0
13-Jul	12.4	2.4	8.0	22.0	11.0	13.2	11.9	4.3	2.0	1.2	1.6	9.9	99.9
14-Jul	15.2	5.8	10.5	20.5	12.9	12.1	11.4	4.9	1.8	0.2	1.4	3.2	99.9
15-Jul	15.8	11.8	14.5	25.5	12.7	7.6	6.0	2.5	1.3	0.1	0.4	1.9	100.1
16-Jul	17.2	11.3	12.2	24.0	14.3	7.5	7.4	3.3	1.5	0.2	0.2	1.0	100.1
17-Jul	11.3	9.2	12.1	22.5	13.0	10.1	10.9	5.5	2.6	0.2	0.4	2.2	100.0
18-Jul	18.6	16.4	14.8	23.8	12.4	5.0	4.2	2.3	1.2	0.1	0.2	1.1	100.1
19-Jul	16.0	15.6	17.6	25.2	12.8	5.3	3.7	1.7	0.8	0.1	0.1	1.2	100.1
20-Jul	18.0	13.2	14.2	22.5	11.2	6.5	7.4	3.0	1.7	0.2	0.3	1.8	100.0
21-Jul	21.6	15.9	16.4	24.1	10.5	4.0	3.4	1.5	0.8	0.1	0.2	1.5	100.0
22-Jul	37.5	13.9	11.2	15.3	8.9	3.8	4.5	2.4	1.2	0.2	0.2	0.8	99.9
23-Jul	25.9	11.9	13.7	24.2	12.2	5.0	4.1	1.2	0.7	0.3	0.2	0.6	100.0
24-Jul	12.8	12.9	10.0	11.5	23.2	20.0	4.0	1.8	1.4	1.0	1.1	0.3	100.0
25-Jul	25.0	16.5	9.6	10.7	18.7	13.6	3.0	1.2	0.8	0.5	0.4	0.2	100.2
26-Jul	32.1	14.8	7.8	13.2	17.4	8.8	3.0	0.9	0.7	0.5	0.5	0.2	99.9
27-Jul	23.2	9.7	15.4	29.3	10.8	3.9	3.1	2.2	0.7	0.6	0.3	0.9	100.1
28-Jul	22.5	9.1	13.8	28.3	11.6	5.1	3.5	2.2	0.6	0.7	1.2	1.3	99.9
29-Jul	20.7	10.1	13.3	30.4	11.0	4.2	3.9	2.1	1.2	1.1	0.8	1.1	99.9
30-Jul	30.7	14.2	9.5	25.4	11.8	3.2	1.4	1.2	0.3	1.5	0.3	0.6	100.1
31-Jul	33.8	16.1	11.9	20.5	9.1	2.7	1.6	1.0	1.1	1.6	0.3	0.4	100.1
01-Aug	35.8	20.5	9.1	9.8	12.1	6.9	2.3	1.2	0.8	0.8	0.3	0.3	99.9
02-Aug	40.4	20.1	10.7	6.5	10.7	7.1	2.3	1.0	0.6	0.4	0.1	0.2	100.1
03-Aug	41.5	15.5	10.0	6.0	12.3	9.7	2.6	1.0	0.7	0.3	0.3	0.1	100.0
04-Aug	40.8	13.7	8.8	20.6	7.7	2.9	1.6	0.7	1.1	0.4	0.9	0.8	100.0
05-Aug	28.4	13.4	6.4	23.3	17.6	5.2	2.1	1.2	0.3	1.0	0.5	0.7	100.1
06-Aug	28.6	11.6	6.3	11.4	18.7	14.2	3.4	2.2	0.8	1.1	0.5	1.0	99.8
07-Aug	32.3	13.2	4.8	6.5	19.1	14.9	3.1	2.1	1.2	0.5	0.2	2.1	100.0
08-Aug	36.7	11.7	5.9	7.3	14.5	11.7	4.1	2.0	1.0	0.4	0.4	4.2	99.9
09-Aug	35.4	11.9	9.5	7.2	14.7	11.6	2.9	1.8	1.2	1.1	0.7	2.0	100.0
10-Aug	44.1	13.0	6.7	6.9	12.0	9.4	2.3	1.6	1.1	1.1	0.6	1.2	100.0
11-Aug	32.7	12.6	6.1	7.6	16.1	15.5	3.6	2.6	1.5	0.6	0.4	0.7	100.0
12-Aug	18.3	12.1	7.7	10.9	18.2	17.7	5.3	3.9	2.0	0.7	0.9	2.3	100.0
13-Aug	32.0	12.8	8.5	13.9	12.8	6.9	4.4	3.0	0.6	0.4	1.1	3.6	100.0
14-Aug	39.6	14.0	5.9	10.4	12.2	5.3	4.8	2.9	0.7	0.3	1.0	2.8	99.9
15-Aug	42.6	13.2	4.7	10.2	11.9	5.2	4.6	3.6	0.7	0.4	1.0	1.8	99.9
16-Aug	44.6	18.3	5.7	7.5	10.2	4.0	3.2	2.7	0.6	0.2	0.7	2.2	99.9
17-Aug	36.3	18.4	6.1	8.3	13.9	5.4	4.3	3.2	0.9	0.3	0.7	2.2	100.0
18-Aug	20.1	11.7	5.3	13.2	20.2	8.6	7.3	5.8	1.5	0.5	1.5	4.2	99.9
19-Aug	33.8	14.7	6.1	11.4	14.5	6.2	5.0	3.7	0.9	0.4	0.7	2.4	99.8
20-Aug	20.1	10.9	4.6	12.1	20.8	8.4	9.4	7.5	3.0	0.4	0.6	2.0	99.8
21-Aug	21.0	14.9	5.9	15.0	19.5	7.4	6.8	4.6	1.6	0.2	0.5	2.5	99.9
22-Aug	12.6	7.5	4.5	18.5	24.0	9.6	8.9	6.7	2.2	0.5	1.1	3.7	99.8
23-Aug	12.8	6.6	4.9	19.8	22.9	7.6	7.8	6.3	3.0	1.0	2.0	5.3	100.0
24-Aug	23.3	12.9	5.4	16.9	20.1	6.6	4.6	3.6	1.3	0.5	0.8	3.9	99.9
Total	29.1	14.6	9.5	14.4	14.0	8.0	4.4	2.5	1.1	0.5	0.5	1.4	100.0

Appendix A.11. Estimated salmon escapement adjacent to the north bank of the Kasilof River,
12 June through 11 August 1994.

Date	Daily	Cum	Date	Daily	Cum
12-Jun	49	49	13-Jul	1,749	60,547
13-Jun	206	255	14-Jul	2,668	63,215
14-Jun	268	523	15-Jul	4,769	67,984
15-Jun	285	808	16-Jul	1,911	69,895
16-Jun	418	1,226	17-Jul	3,642	73,537
17-Jun	349	1,575	18-Jul	3,290	76,827
18-Jun	429	2,004	19-Jul	2,071	78,898
19-Jun	300	2,304	20-Jul	1,879	80,777
20-Jun	413	2,717	21-Jul	1,179	81,956
21-Jun	375	3,092	22-Jul	526	82,482
22-Jun	613	3,705	23-Jul	426	82,908
23-Jun	787	4,492	24-Jul	484	83,392
24-Jun	1,086	5,578	25-Jul	412	83,804
25-Jun	1,563	7,141	26-Jul	418	84,222
26-Jun	1,742	8,883	27-Jul	621	84,843
27-Jun	2,684	11,567	28-Jul	732	85,575
28-Jun	4,177	15,744	29-Jul	919	86,494
29-Jun	5,563	21,307	30-Jul	1,071	87,565
30-Jun	4,583	25,890	31-Jul	1,509	89,074
01-Jul	2,339	28,229	01-Aug	1,604	90,678
02-Jul	350	28,579	02-Aug	978	91,656
03-Jul	2,098	30,677	03-Aug	492	92,148
04-Jul	2,098	32,775	04-Aug	412	92,560
05-Jul	1,023	33,798	05-Aug	387	92,947
06-Jul	4,841	38,639	06-Aug	409	93,356
07-Jul	6,861	45,500	07-Aug	346	93,702
08-Jul	5,356	50,856	08-Aug	323	94,025
09-Jul	1,943	52,799	09-Aug	498	94,523
10-Jul	3,728	56,527	10-Aug	607	95,130
11-Jul	1,279	57,806	11-Aug	612	95,742
12-Jul	992	58,798			

Appendix A.12. Estimated salmon escapement adjacent to the south bank of the Kasilof River,
12 June through 11 August 1994.

Date	Daily	Cum	Date	Daily	Cum
12-Jun	47	47	13-Jul	899	55,366
13-Jun	193	240	14-Jul	1,288	56,654
14-Jun	158	398	15-Jul	3,132	59,786
15-Jun	206	604	16-Jul	698	60,484
16-Jun	307	911	17-Jul	5,339	65,823
17-Jun	304	1,215	18-Jul	3,230	69,053
18-Jun	214	1,429	19-Jul	2,152	71,205
19-Jun	345	1,774	20-Jul	1,887	73,092
20-Jun	610	2,384	21-Jul	1,441	74,533
21-Jun	554	2,938	22-Jul	1,103	75,636
22-Jun	320	3,258	23-Jul	950	76,586
23-Jun	348	3,606	24-Jul	1,930	78,516
24-Jun	543	4,149	25-Jul	1,531	80,047
25-Jun	529	4,678	26-Jul	1,006	81,053
26-Jun	909	5,587	27-Jul	963	82,016
27-Jun	2,103	7,690	28-Jul	1,762	83,778
28-Jun	3,075	10,765	29-Jul	3,170	86,948
29-Jun	3,301	14,066	30-Jul	3,627	90,575
30-Jun	5,085	19,151	31-Jul	3,416	93,991
01-Jul	3,848	22,999	01-Aug	5,584	99,575
02-Jul	839	23,838	02-Aug	2,223	101,798
03-Jul	3,270	27,108	03-Aug	1,286	103,084
04-Jul	6,209	33,317	04-Aug	1,040	104,124
05-Jul	1,195	34,512	05-Aug	1,032	105,156
06-Jul	3,695	38,207	06-Aug	901	106,057
07-Jul	5,906	44,113	07-Aug	591	106,648
08-Jul	4,094	48,207	08-Aug	567	107,215
09-Jul	1,804	50,011	09-Aug	675	107,890
10-Jul	3,131	53,142	10-Aug	804	108,694
11-Jul	800	53,942	11-Aug	681	109,375
12-Jul	525	54,467			

Appendix A.13. Kasilof River north bank sonar counts by hour, 12 June through 11 August 1994.

Counts by Hour																										
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
12-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	9	6	13	19	49	49
13-Jun	23	28	25	30	11	7	2	2	4	4	7	3	3	4	4	3	2	0	2	5	3	3	13	18	206	255
14-Jun	32	44	22	22	8	9	13	5	6	3	2	5	8	18	3	0	2	0	1	3	2	10	18	32	268	523
15-Jun	48	51	51	11	10	7	10	4	8	1	4	7	3	3	1	12	0	2	0	3	2	8	9	30	285	808
16-Jun	56	87	47	36	28	7	11	3	4	10	3	8	8	9	10	16	18	4	16	5	3	8	8	13	418	1,226
17-Jun	47	53	67	28	32	9	21	24	3	2	2	9	3	2	7	2	4	7	1	6	1	7	6	6	349	1,575
18-Jun	35	78	73	43	29	14	12	4	7	6	2	3	10	0	10	10	16	11	15	14	6	6	14	11	429	2,004
19-Jun	30	47	55	23	12	7	0	1	4	2	7	5	4	4	9	4	14	22	7	9	7	9	4	14	300	2,304
20-Jun	34	51	49	33	27	8	3	6	12	4	3	5	9	13	16	6	17	18	27	25	7	13	11	16	413	2,717
21-Jun	8	25	57	39	44	22	14	7	7	7	9	4	7	11	8	1	5	21	19	12	10	8	15	15	375	3,092
22-Jun	13	27	64	24	35	31	33	32	22	12	15	12	10	26	13	13	7	25	29	41	50	34	22	23	613	3,705
23-Jun	41	47	49	23	31	7	15	19	32	38	26	17	42	44	52	34	24	22	29	42	69	53	18	15	787	4,492
24-Jun	30	29	70	58	73	47	29	15	16	10	11	19	22	47	49	44	33	41	35	95	115	107	44	47	1,086	5,578
25-Jun	25	52	73	63	44	22	39	49	45	70	60	50	47	33	34	25	33	35	44	45	99	242	214	120	1,563	7,141
26-Jun	55	58	39	23	23	34	27	16	22	18	22	23	19	22	40	65	80	54	62	65	260	310	256	149	1,742	8,883
27-Jun	90	49	42	25	34	21	18	22	69	61	53	58	92	117	154	133	184	170	165	183	348	325	140	131	2,684	11,567
28-Jun	98	62	59	51	43	42	24	82	203	174	183	113	156	205	117	120	234	178	195	269	199	595	516	259	4,177	15,744
29-Jun	143	89	81	56	52	44	51	61	67	198	319	183	116	112	314	429	324	423	270	235	392	647	826	131	5,563	21,307
30-Jun	30	45	56	54	36	85	78	72	20	55	56	142	155	101	110	318	270	294	378	245	215	676	673	419	4,583	25,890
01-Jul	99	41	76	107	73	38	50	38	33	47	46	220	385	201	83	117	177	162	109	87	52	31	26	41	2,339	28,229
02-Jul	21	13	24	6	12	8	5	7	7	7	4	5	30	33	39	24	9	20	14	7	20	11	12	12	350	28,579
03-Jul	15	25	27	33	25	24	26	25	18	18	18	13	36	41	215	358	196	222	289	184	101	86	59	44	2,098	30,677
04-Jul	75	63	72	104	68	71	56	43	41	33	43	73	111	151	120	172	230	141	90	81	99	77	48	36	2,098	32,775
05-Jul	37	37	32	36	22	16	16	6	14	8	7	13	19	31	52	75	206	69	39	49	81	56	46	56	1,023	33,798
06-Jul	46	97	123	252	186	105	90	174	183	142	74	147	195	151	183	286	554	486	308	166	302	287	159	145	4,841	38,639
07-Jul	136	144	222	317	501	332	142	194	593	432	327	279	251	194	150	288	316	675	382	165	262	245	167	147	6,861	45,500
08-Jul	168	108	199	204	353	251	155	91	279	325	220	163	125	184	162	314	242	447	574	308	149	125	121	89	5,356	50,856
09-Jul	73	56	50	54	61	101	57	29	32	66	46	30	27	43	74	93	86	172	228	122	74	194	98	77	1,943	52,799
10-Jul	37	61	59	134	230	436	463	185	85	82	98	82	66	78	105	231	177	156	254	265	158	86	86	116	3,728	56,527
11-Jul	78	56	49	47	60	53	41	75	34	21	33	74	46	61	52	67	62	53	47	83	74	53	19	41	1,279	57,806
12-Jul	41	20	14	22	19	20	17	32	41	33	38	42	41	46	37	42	65	68	65	55	98	75	33	28	992	58,798
13-Jul	59	41	58	38	48	65	46	59	103	103	59	61	89	90	68	64	72	73	105	77	88	155	70	58	1,749	60,547
14-Jul	40	55	45	56	58	45	58	54	68	183	81	79	103	174	102	155	124	107	189	188	166	301	166	73	2,668	63,215
15-Jul	71	94	78	116	99	144	120	118	281	332	848	534	221	225	271	157	166	111	118	127	137	180	149	74	4,769	67,984
16-Jul	79	91	55	92	76	65	48	49	66	65	51	103	163	127	81	112	80	123	76	55	81	42	55	96	1,911	69,895
17-Jul	88	69	80	118	98	93	68	57	75	94	108	124	175	394	255	258	229	218	183	174	170	151	204	160	3,642	73,537
18-Jul	197	174	127	148	193	220	193	114	109	108	110	113	138	145	268	196	91	123	131	88	72	79	75	80	3,290	76,827
19-Jul	103	148	130	99	78	84	69	49	49	44	67	78	99	77	111	170	147	81	46	79	64	86	58	55	2,071	78,898
20-Jul	49	63	108	206	147	83	53	40	62	101	48	45	94	54	77	63	105	86	64	42	104	77	72	36	1,879	80,777
21-Jul	43	65	52	59	106	98	72	57	69	44	41	33	44	41	37	23	27	41	39	27	50	54	33	24	1,179	81,956

-Continued-

FN: 94KA1HC.WK3

Counts by Hour

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
22-Jul	21	16	25	29	29	53	29	24	31	23	20	16	30	18	17	14	19	21	16	29	9	19	5	13	526	82,482
23-Jul	20	11	15	24	16	28	25	8	21	25	15	9	14	19	8	15	10	19	23	24	27	11	17	22	426	82,908
24-Jul	27	16	14	13	16	18	53	24	10	11	15	15	27	18	17	9	17	34	18	20	17	15	29	31	484	83,392
25-Jul	44	41	40	16	10	15	11	29	11	2	8	9	8	12	13	12	16	42	19	6	15	12	12	9	412	83,804
26-Jul	9	16	6	9	12	6	13	5	14	8	14	4	13	24	29	20	22	19	21	16	37	53	28	20	418	84,222
27-Jul	18	18	16	18	10	23	14	14	23	40	49	39	20	41	28	29	23	25	30	24	23	26	45	25	621	84,843
28-Jul	29	22	27	19	19	19	28	23	16	23	25	28	26	24	41	44	26	29	42	40	49	40	42	51	732	85,575
29-Jul	22	42	53	67	57	57	61	40	34	30	30	27	38	34	31	64	41	25	24	27	21	25	15	54	919	86,494
30-Jul	52	28	26	33	24	40	45	44	38	37	53	36	49	53	75	46	79	55	53	35	17	42	33	78	1,071	87,565
31-Jul	76	54	42	33	26	86	99	48	58	27	37	57	42	65	59	60	54	77	98	104	103	54	78	72	1,509	89,074
01-Aug	95	99	64	43	52	106	205	95	112	62	56	54	55	42	31	22	56	71	47	27	39	88	50	33	1,604	90,678
02-Aug	28	27	19	28	23	25	58	81	43	44	38	28	42	67	37	42	60	50	68	43	26	43	33	25	978	91,656
03-Aug	15	11	17	18	24	12	28	45	27	21	28	32	25	17	16	11	10	26	22	26	14	25	16	6	492	92,148
04-Aug	8	6	2	1	3	8	17	12	8	9	19	24	15	39	8	18	29	40	25	22	29	9	26	35	412	92,560
05-Aug	12	29	4	4	4	10	10	12	29	18	22	14	8	20	12	19	19	16	22	22	21	29	11	20	387	92,947
06-Aug	7	8	20	8	8	9	1	24	17	7	23	19	21	27	26	28	16	11	36	20	22	26	17	8	409	93,356
07-Aug	10	33	3	8	8	8	11	10	20	12	8	17	18	8	24	12	13	24	18	20	18	19	13	11	346	93,702
08-Aug	11	7	8	9	11	11	7	18	17	4	23	24	12	7	13	15	14	16	18	17	15	14	18	14	323	94,025
09-Aug	10	8	5	7	13	7	17	14	17	19	14	23	13	21	34	22	31	34	36	49	28	27	24	25	498	94,523
10-Aug	19	8	14	7	11	10	47	18	28	21	18	30	29	33	55	30	24	31	19	45	25	40	30	15	607	95,130
11-Aug	12	17	20	6	8	5	31	23	43	33	22	42	29	35	30	25	29	48	41	40	28	17	15	13	612	95,742
Total	2,938	2,960	3,097	3,288	3,465	3,331	3,055	2,531	3,410	3,437	3,687	3,524	3,706	3,936	4,097	5,057	5,236	5,674	5,341	4,389	4,762	6,152	5,133	3,536	95,742	

Appendix A.14. Kasilof River south bank sonar counts by hour, 12 June through 11 August 1994.

Counts by Hour																											
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total	
12-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	16	5	6	1	47	47	
13-Jun	19	26	11	17	16	20	25	4	3	0	1	2	9	6	9	2	2	5	8	2	0	1	1	4	193	240	
14-Jun	5	13	10	12	10	12	10	0	19	5	1	2	3	2	4	8	4	6	8	5	8	4	2	5	158	398	
15-Jun	24	16	16	14	9	6	25	3	0	14	1	2	1	8	12	5	2	2	20	10	0	1	2	13	206	604	
16-Jun	19	20	26	11	8	3	5	6	9	16	11	1	7	12	17	15	9	10	18	18	7	33	12	14	307	911	
17-Jun	38	26	27	35	21	26	7	8	8	11	8	2	4	10	24	6	2	0	2	1	4	8	16	10	304	1,215	
18-Jun	8	19	53	11	16	7	5	3	2	6	4	7	2	11	7	0	7	9	12	1	6	8	5	5	214	1,429	
19-Jun	16	81	62	22	11	23	9	5	4	2	16	4	10	4	4	9	7	3	3	1	2	2	1	44	345	1,774	
20-Jun	11	55	67	54	63	17	18	3	1	1	16	7	8	51	23	2	5	13	7	18	6	23	57	84	610	2,384	
21-Jun	58	41	25	42	38	85	69	7	9	10	6	9	4	7	20	16	32	17	16	4	8	14	9	8	554	2,938	
22-Jun	16	16	44	36	43	22	12	14	22	3	3	6	3	12	4	0	2	11	5	1	12	3	13	17	320	3,258	
23-Jun	9	31	23	8	10	8	2	11	4	15	14	18	2	19	9	10	4	4	27	18	31	34	23	14	348	3,606	
24-Jun	22	47	32	32	32	60	52	4	3	6	17	24	14	10	9	13	7	8	12	44	33	15	22	25	543	4,149	
25-Jun	29	38	76	31	15	10	22	39	29	36	17	17	21	11	4	11	11	10	8	10	12	25	24	23	529	4,678	
26-Jun	35	72	75	77	23	23	16	11	27	30	23	20	19	10	17	11	33	18	11	30	98	83	69	78	909	5,587	
27-Jun	95	119	95	109	73	69	32	34	78	133	94	93	154	114	94	71	75	74	64	49	119	127	53	85	2,103	7,690	
28-Jun	141	153	118	126	107	103	105	125	209	271	144	92	84	104	66	77	67	48	50	54	116	298	224	193	3,075	10,765	
29-Jun	208	227	170	142	132	133	137	146	127	138	211	163	95	80	120	118	82	56	73	62	80	196	191	214	3,301	14,066	
30-Jun	211	340	347	309	282	288	169	162	138	144	216	388	299	177	140	172	235	133	90	100	117	201	246	181	5,085	19,151	
01-Jul	191	133	191	171	215	211	176	121	126	136	129	161	304	244	170	224	168	146	106	93	124	123	106	79	3,848	22,999	
02-Jul	58	30	32	44	37	22	11	32	15	20	26	50	54	56	63	35	36	26	18	20	14	39	45	56	839	23,838	
03-Jul	84	87	63	41	59	81	77	71	29	45	56	83	74	101	128	197	146	96	97	203	336	336	449	331	3,270	27,108	
04-Jul	243	472	498	411	353	246	426	309	210	196	273	218	185	127	266	281	562	247	94	138	121	107	142	84	6,209	33,317	
05-Jul	77	91	78	85	52	42	28	31	34	31	17	35	22	36	32	50	82	19	27	21	76	50	77	102	1,195	34,512	
06-Jul	109	106	217	284	315	190	87	139	193	133	131	55	86	138	103	191	167	301	161	57	92	112	143	185	3,695	38,207	
07-Jul	177	153	167	448	669	581	288	277	279	273	228	146	136	147	300	371	223	294	241	46	31	147	158	126	5,906	44,113	
08-Jul	110	138	131	204	453	582	299	189	62	116	114	96	89	165	230	213	230	132	229	65	38	72	73	64	4,094	48,207	
09-Jul	69	82	47	32	51	104	98	48	22	66	88	57	46	77	58	44	53	68	182	85	51	84	155	137	1,804	50,011	
10-Jul	87	72	83	126	191	241	411	276	112	117	176	170	117	139	125	98	89	60	69	125	78	34	58	77	3,131	53,142	
11-Jul	77	60	15	45	24	21	17	71	40	32	24	22	40	49	18	31	27	33	14	21	40	31	28	20	800	53,942	
12-Jul	22	24	25	28	20	40	13	10	29	38	17	15	16	12	22	17	19	19	32	25	17	25	26	14	525	54,467	
13-Jul	25	28	33	17	34	32	31	36	40	57	35	21	39	43	40	32	32	30	17	43	64	93	44	33	899	55,366	
14-Jul	52	46	44	36	20	15	29	36	61	67	57	24	46	77	47	40	59	45	71	45	74	118	123	56	1,288	56,654	
15-Jul	28	50	91	42	132	106	111	178	229	175	156	259	175	202	290	107	83	66	100	92	172	127	98	63	3,132	59,786	
16-Jul	48	19	25	32	24	31	25	22	31	27	17	38	37	28	19	35	38	21	22	19	8	22	33	77	698	60,484	
17-Jul	83	71	60	77	77	93	66	64	85	127	144	197	157	281	369	280	426	624	780	521	174	151	255	177	5,339	65,823	
18-Jul	238	199	140	58	74	57	39	317	202	125	103	122	111	138	200	211	124	71	93	100	129	138	112	129	3,230	69,053	
19-Jul	111	210	183	96	73	126	170	145	84	59	67	77	60	44	48	108	132	52	45	48	62	47	61	44	2,152	71,205	
20-Jul	38	51	66	121	115	77	76	82	148	138	76	34	69	50	61	97	121	177	91	61	42	32	30	34	1,887	73,092	
21-Jul	35	23	37	43	66	71	76	82	66	92	77	76	47	46	32	77	70	74	61	77	60	56	65	32	1,441	74,533	

-Continued-

Date	Counts by Hour																								Daily Total	Cum Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
22-Jul	31	33	29	34	42	85	96	57	31	39	48	62	36	33	17	44	48	48	60	61	43	34	55	37	1,103	75,636
23-Jul	18	10	23	30	39	97	120	58	30	24	27	43	35	12	26	31	18	23	48	89	40	30	41	38	950	76,586
24-Jul	37	22	26	16	19	26	106	126	77	82	120	94	78	58	80	78	57	96	150	281	101	31	79	90	1,930	78,516
25-Jul	67	69	47	39	37	43	48	105	108	37	27	76	42	49	40	73	84	100	74	54	155	89	33	35	1,531	80,047
26-Jul	39	34	37	25	34	21	34	22	40	73	35	46	49	32	43	43	55	43	27	24	44	96	73	37	1,006	81,053
27-Jul	24	30	19	14	9	15	27	23	15	20	70	28	40	22	42	42	90	36	32	46	37	76	161	45	963	82,016
28-Jul	14	15	17	22	12	33	68	62	62	116	83	136	123	107	117	45	100	79	44	28	83	100	206	90	1,762	83,778
29-Jul	37	60	68	80	77	96	163	145	156	129	129	145	382	284	228	133	103	150	110	101	92	121	112	69	3,170	86,948
30-Jul	43	21	25	23	47	119	247	184	140	151	101	95	75	271	170	146	237	204	229	200	337	226	137	199	3,627	90,575
31-Jul	107	52	26	35	67	249	267	189	173	236	182	120	116	97	119	144	120	184	161	131	105	258	167	111	3,416	93,991
01-Aug	164	188	116	63	99	355	486	354	411	246	253	194	124	124	192	215	301	388	295	353	267	173	155	68	5,584	99,575
02-Aug	49	44	34	34	52	90	236	210	183	143	127	139	74	74	85	77	74	76	100	85	77	55	65	40	2,223	101,798
03-Aug	28	23	30	9	15	46	64	105	83	121	92	74	57	28	35	24	57	56	68	48	70	86	40	27	1,286	103,084
04-Aug	36	16	21	6	22	13	27	12	53	57	42	34	44	33	56	37	51	57	89	53	88	77	70	46	1,040	104,124
05-Aug	26	18	6	8	11	11	33	45	44	58	56	66	27	27	44	48	67	47	57	91	66	89	54	33	1,032	105,156
06-Aug	28	21	20	11	9	20	30	56	40	75	85	37	51	36	31	40	46	56	37	37	38	39	36	22	901	106,057
07-Aug	25	11	3	11	4	10	24	14	30	35	39	34	30	30	31	27	25	43	16	35	28	54	15	17	591	106,648
08-Aug	17	17	16	7	10	19	24	47	32	31	33	33	27	44	27	19	11	21	16	30	26	23	21	16	567	107,215
09-Aug	16	7	9	11	5	3	23	21	15	32	19	24	22	48	57	43	36	28	21	51	68	46	56	16	675	107,890
10-Aug	24	21	30	13	9	19	22	35	66	52	43	60	47	44	44	50	29	45	34	30	23	27	22	15	804	108,694
11-Aug	10	15	13	13	12	27	22	51	28	30	30	32	26	48	45	65	23	30	64	35	24	17	14	7	681	109,375
Total	3,766	4,212	4,118	4,033	4,594	5,281	5,441	5,042	4,606	4,698	4,455	4,385	4,154	4,349	4,733	4,709	5,105	4,838	4,716	4,215	4,288	4,772	4,869	3,996	109,375	

Appendix A.15. Kasilof River north bank sonar counts by hour, 12 June through 11 August 1994. Counts expressed as percentage of daily total.

Date	Counts by Hour																								Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
12-Jun	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	18.4	12.2	26.5	38.8	100.0
13-Jun	11.2	13.6	12.1	14.6	5.3	3.4	1.0	1.0	1.9	1.9	3.4	1.5	1.5	1.9	1.9	1.5	1.0	0.0	1.0	2.4	1.5	1.5	6.3	8.7	100.1
14-Jun	11.9	16.4	8.2	8.2	3.0	3.4	4.9	1.9	2.2	1.1	0.7	1.9	3.0	6.7	1.1	0.0	0.7	0.0	0.4	1.1	0.7	3.7	6.7	11.9	99.8
15-Jun	16.8	17.9	17.9	3.9	3.5	2.5	3.5	1.4	2.8	0.4	1.4	2.5	1.1	1.1	0.4	4.2	0.0	0.7	0.0	1.1	0.7	2.8	3.2	10.5	100.3
16-Jun	13.4	20.8	11.2	8.6	6.7	1.7	2.6	0.7	1.0	2.4	0.7	1.9	1.9	2.2	2.4	3.8	4.3	1.0	3.8	1.2	0.7	1.9	1.9	3.1	99.9
17-Jun	13.5	15.2	19.2	8.0	9.2	2.6	6.0	6.9	0.9	0.6	0.6	2.6	0.9	0.6	2.0	0.6	1.1	2.0	0.3	1.7	0.3	2.0	1.7	1.7	100.2
18-Jun	8.2	18.2	17.0	10.0	6.8	3.3	2.8	0.9	1.6	1.4	0.5	0.7	2.3	0.0	2.3	2.3	3.7	2.6	3.5	3.3	1.4	1.4	3.3	2.6	100.1
19-Jun	10.0	15.7	18.3	7.7	4.0	2.3	0.0	0.3	1.3	0.7	2.3	1.7	1.3	1.3	3.0	1.3	4.7	7.3	2.3	3.0	2.3	3.0	1.3	4.7	99.8
20-Jun	8.2	12.3	11.9	8.0	6.5	1.9	0.7	1.5	2.9	1.0	0.7	1.2	2.2	3.1	3.9	1.5	4.1	4.4	6.5	6.1	1.7	3.1	2.7	3.9	100.0
21-Jun	2.1	6.7	15.2	10.4	11.7	5.9	3.7	1.9	1.9	1.9	2.4	1.1	1.9	2.9	2.1	0.3	1.3	5.6	5.1	3.2	2.7	2.1	4.0	4.0	100.1
22-Jun	2.1	4.4	10.4	3.9	5.7	5.1	5.4	5.2	3.6	2.0	2.4	2.0	1.6	4.2	2.1	2.1	1.1	4.1	4.7	6.7	8.2	5.5	3.6	3.8	99.9
23-Jun	5.2	6.0	6.2	2.9	3.9	0.9	1.9	2.4	4.1	4.6	3.3	2.2	5.3	5.6	6.6	4.3	3.0	2.8	3.7	5.3	8.8	6.7	2.3	1.9	99.9
24-Jun	2.8	2.7	6.4	5.3	6.7	4.3	2.7	1.4	1.5	0.9	1.0	1.7	2.0	4.3	4.5	4.1	3.0	3.8	3.2	8.7	10.6	9.9	4.1	4.3	99.9
25-Jun	1.6	3.3	4.7	4.0	2.8	1.4	2.5	3.1	2.9	4.5	3.8	3.2	3.0	2.1	2.2	1.6	2.1	2.2	2.8	2.9	6.3	15.5	13.7	7.7	99.9
26-Jun	3.2	3.3	2.2	1.3	1.3	2.0	1.5	0.9	1.3	1.0	1.3	1.3	1.1	1.3	2.3	3.7	4.6	3.1	3.6	3.7	14.9	17.8	14.7	8.6	100.0
27-Jun	3.4	1.8	1.6	0.9	1.3	0.8	0.7	0.8	2.6	2.3	2.0	2.2	3.4	4.4	5.7	5.0	6.9	6.3	6.1	6.8	13.0	12.1	5.2	4.9	100.2
28-Jun	2.3	1.5	1.4	1.2	1.0	1.0	0.6	2.0	4.9	4.2	4.4	2.7	3.7	4.9	2.8	2.9	5.6	4.3	4.7	6.4	4.8	14.2	12.4	6.2	100.1
29-Jun	2.6	1.6	1.5	1.0	0.9	0.8	0.9	1.1	1.2	3.6	5.7	3.3	2.1	2.0	5.6	7.7	5.8	7.6	4.9	4.2	7.0	11.6	14.8	2.4	99.9
30-Jun	0.7	1.0	1.2	1.2	0.8	1.9	1.7	1.6	0.4	1.2	1.2	3.1	3.4	2.2	2.4	6.9	5.9	6.4	8.2	5.3	4.7	14.8	14.7	9.1	100.0
01-Jul	4.2	1.8	3.2	4.6	3.1	1.6	2.1	1.6	1.4	2.0	2.0	9.4	16.5	8.6	3.5	5.0	7.6	6.9	4.7	3.7	2.2	1.3	1.1	1.8	99.9
02-Jul	6.0	3.7	6.9	1.7	3.4	2.3	1.4	2.0	2.0	2.0	1.1	1.4	8.6	9.4	11.1	6.9	2.6	5.7	4.0	2.0	5.7	3.1	3.4	3.4	99.8
03-Jul	0.7	1.2	1.3	1.6	1.2	1.1	1.2	1.2	0.9	0.9	0.9	0.6	1.7	2.0	10.2	17.1	9.3	10.6	13.8	8.8	4.8	4.1	2.8	2.1	100.1
04-Jul	3.6	3.0	3.4	5.0	3.2	3.4	2.7	2.0	2.0	1.6	2.0	3.5	5.3	7.2	5.7	8.2	11.0	6.7	4.3	3.9	4.7	3.7	2.3	1.7	100.1
05-Jul	3.6	3.6	3.1	3.5	2.2	1.6	1.6	0.6	1.4	0.8	0.7	1.3	1.9	3.0	5.1	7.3	20.1	6.7	3.8	4.8	7.9	5.5	4.5	5.5	100.1
06-Jul	1.0	2.0	2.5	5.2	3.8	2.2	1.9	3.6	3.8	2.9	1.5	3.0	4.0	3.1	3.8	5.9	11.4	10.0	6.4	3.4	6.2	5.9	3.3	3.0	99.8
07-Jul	2.0	2.1	3.2	4.6	7.3	4.8	2.1	2.8	8.6	6.3	4.8	4.1	3.7	2.8	2.2	4.2	4.6	9.8	5.6	2.4	3.8	3.6	2.4	2.1	99.9
08-Jul	3.1	2.0	3.7	3.8	6.6	4.7	2.9	1.7	5.2	6.1	4.1	3.0	2.3	3.4	3.0	5.9	4.5	8.3	10.7	5.8	2.8	2.3	2.3	1.7	99.9
09-Jul	3.8	2.9	2.6	2.8	3.1	5.2	2.9	1.5	1.6	3.4	2.4	1.5	1.4	2.2	3.8	4.8	4.4	8.9	11.7	6.3	3.8	10.0	5.0	4.0	100.0
10-Jul	1.0	1.6	1.6	3.6	6.2	11.7	12.4	5.0	2.3	2.2	2.6	2.2	1.8	2.1	2.8	6.2	4.7	4.2	6.8	7.1	4.2	2.3	2.3	3.1	100.0
11-Jul	6.1	4.4	3.8	3.7	4.7	4.1	3.2	5.9	2.7	1.6	2.6	5.8	3.6	4.8	4.1	5.2	4.8	4.1	3.7	6.5	5.8	4.1	1.5	3.2	100.0
12-Jul	4.1	2.0	1.4	2.2	1.9	2.0	1.7	3.2	4.1	3.3	3.8	4.2	4.1	4.6	3.7	4.2	6.6	6.9	6.6	5.5	9.9	7.6	3.3	2.8	99.7
13-Jul	3.4	2.3	3.3	2.2	2.7	3.7	2.6	3.4	5.9	5.9	3.4	3.5	5.1	5.1	3.9	3.7	4.1	4.2	6.0	4.4	5.0	8.9	4.0	3.3	100.0
14-Jul	1.5	2.1	1.7	2.1	2.1	1.7	2.2	2.0	2.5	6.9	3.0	3.0	3.9	6.5	3.8	5.8	4.6	4.0	7.1	7.0	6.2	11.3	6.2	2.7	99.9
15-Jul	1.5	2.0	1.6	2.4	2.1	3.0	2.5	2.5	5.9	7.0	17.8	11.2	4.6	4.7	5.7	3.3	3.5	2.3	2.5	2.7	2.9	3.8	3.1	1.6	100.2
16-Jul	4.1	4.8	2.9	4.8	4.0	3.4	2.5	2.6	3.5	3.4	2.7	5.4	8.5	6.6	4.2	5.9	4.2	6.4	4.0	2.9	3.2	2.2	2.9	5.0	100.1
17-Jul	2.4	1.9	2.2	3.2	2.6	2.6	1.9	1.6	2.1	2.6	3.0	3.4	4.8	10.8	7.0	7.1	6.3	6.0	5.0	4.8	4.7	4.1	5.6	4.4	100.1
18-Jul	6.0	5.3	3.9	4.4	5.9	6.7	5.9	3.5	3.3	3.3	3.3	3.4	4.2	4.4	8.1	6.0	2.8	3.7	4.0	2.7	2.2	2.4	2.3	2.4	100.1
19-Jul	5.0	7.1	6.3	4.8	3.8	4.1	3.3	2.4	2.4	2.1	3.2	3.8	4.8	3.7	5.4	8.2	7.1	3.9	2.2	3.8	3.1	4.2	2.8	2.7	100.2
20-Jul	2.6	3.4	5.7	11.0	7.8	4.4	2.8	2.1	3.3	5.4	2.6	2.4	5.0	2.9	4.1	3.4	5.6	4.6	3.4	2.2	5.5	4.1	3.8	1.9	100.0
21-Jul	3.6	5.5	4.4	5.0	9.0	8.3	6.1	4.8	5.9	3.7	3.5	2.8	3.7	3.5	3.1	2.0	2.3	3.5	3.3	2.3	4.2	4.6	2.8	2.0	99.9

-Continued-

	Counts by Hour																								Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
22-Jul	4.0	3.0	4.8	5.5	5.5	10.1	5.5	4.6	5.9	4.4	3.8	3.0	5.7	3.4	3.2	2.7	3.6	4.0	3.0	5.5	1.7	3.6	1.0	2.5	100.0
23-Jul	4.7	2.6	3.5	5.6	3.8	6.6	5.9	1.9	4.9	5.9	3.5	2.1	3.3	4.5	1.9	3.5	2.3	4.5	5.4	5.6	6.3	2.6	4.0	5.2	100.1
24-Jul	5.6	3.3	2.9	2.7	3.3	3.7	11.0	5.0	2.1	2.3	3.1	3.1	5.6	3.7	3.5	1.9	3.5	7.0	3.7	4.1	3.5	3.1	6.0	6.4	100.1
25-Jul	10.7	10.0	9.7	3.9	2.4	3.6	2.7	7.0	2.7	0.5	1.9	2.2	1.9	2.9	3.2	2.9	3.9	10.2	4.6	1.5	3.6	2.9	2.9	2.2	100.0
26-Jul	2.2	3.8	1.4	2.2	2.9	1.4	3.1	1.2	3.3	1.9	3.3	1.0	3.1	5.7	6.9	4.8	5.3	4.5	5.0	3.8	8.9	12.7	6.7	4.8	99.9
27-Jul	2.9	2.9	2.6	2.9	1.6	3.7	2.3	2.3	3.7	6.4	7.9	6.3	3.2	6.6	4.5	4.7	3.7	4.0	4.8	3.9	3.7	4.2	7.2	4.0	100.0
28-Jul	4.0	3.0	3.7	2.6	2.6	2.6	3.8	3.1	2.2	3.1	3.4	3.8	3.6	3.3	5.6	6.0	3.6	4.0	5.7	5.5	6.7	5.5	5.7	7.0	100.1
29-Jul	2.4	4.6	5.8	7.3	6.2	6.2	6.6	4.4	3.7	3.3	3.3	2.9	4.1	3.7	3.4	7.0	4.5	2.7	2.6	2.9	2.3	2.7	1.6	5.9	100.1
30-Jul	4.9	2.6	2.4	3.1	2.2	3.7	4.2	4.1	3.5	3.5	4.9	3.4	4.6	4.9	7.0	4.3	7.4	5.1	4.9	3.3	1.6	3.9	3.1	7.3	99.9
31-Jul	5.0	3.6	2.8	2.2	1.7	5.7	6.6	3.2	3.8	1.8	2.5	3.8	2.8	4.3	3.9	4.0	3.6	5.1	6.5	6.9	6.8	3.6	5.2	4.8	100.2
01-Aug	5.9	6.2	4.0	2.7	3.2	6.6	12.8	5.9	7.0	3.9	3.5	3.4	3.4	2.6	1.9	1.4	3.5	4.4	2.9	1.7	2.4	5.5	3.1	2.1	100.0
02-Aug	2.9	2.8	1.9	2.9	2.4	2.6	5.9	8.3	4.4	4.5	3.9	2.9	4.3	6.9	3.8	4.3	6.1	5.1	7.0	4.4	2.7	4.4	3.4	2.6	100.4
03-Aug	3.0	2.2	3.5	3.7	4.9	2.4	5.7	9.1	5.5	4.3	5.7	6.5	5.1	3.5	3.3	2.2	2.0	5.3	4.5	5.3	2.8	5.1	3.3	1.2	100.1
04-Aug	1.9	1.5	0.5	0.2	0.7	1.9	4.1	2.9	1.9	2.2	4.6	5.8	3.6	9.5	1.9	4.4	7.0	9.7	6.1	5.3	7.0	2.2	6.3	8.5	99.7
05-Aug	3.1	7.5	1.0	1.0	1.0	2.6	2.6	3.1	7.5	4.7	5.7	3.6	2.1	5.2	3.1	4.9	4.9	4.1	5.7	5.7	5.4	7.5	2.8	5.2	100.0
06-Aug	1.7	2.0	4.9	2.0	2.0	2.2	0.2	5.9	4.2	1.7	5.6	4.6	5.1	6.6	6.4	6.8	3.9	2.7	8.8	4.9	5.4	6.4	4.2	2.0	100.2
07-Aug	2.9	9.5	0.9	2.3	2.3	2.3	3.2	2.9	5.8	3.5	2.3	4.9	5.2	2.3	6.9	3.5	3.8	6.9	5.2	5.8	5.2	5.5	3.8	3.2	100.1
08-Aug	3.4	2.2	2.5	2.8	3.4	3.4	2.2	5.6	5.3	1.2	7.1	7.4	3.7	2.2	4.0	4.6	4.3	5.0	5.6	5.3	4.6	4.3	5.6	4.3	100.0
09-Aug	2.0	1.6	1.0	1.4	2.6	1.4	3.4	2.8	3.4	3.8	2.8	4.6	2.6	4.2	6.8	4.4	6.2	6.8	7.2	9.8	5.6	5.4	4.8	5.0	99.6
10-Aug	3.1	1.3	2.3	1.2	1.8	1.6	7.7	3.0	4.6	3.5	3.0	4.9	4.8	5.4	9.1	4.9	4.0	5.1	3.1	7.4	4.1	6.6	4.9	2.5	99.9
11-Aug	2.0	2.8	3.3	1.0	1.3	0.8	5.1	3.8	7.0	5.4	3.6	6.9	4.7	5.7	4.9	4.1	4.7	7.8	6.7	6.5	4.6	2.8	2.5	2.1	100.1
Total	3.1	3.1	3.2	3.4	3.6	3.5	3.2	2.6	3.6	3.6	3.9	3.7	3.9	4.1	4.3	5.3	5.5	5.9	5.6	4.6	5.0	6.4	5.4	3.7	100.2

Appendix A.16. Kasilof River south bank sonar counts by hour, 12 June through 11 August 1994. Counts expressed as percentage of daily total.

Date	Counts by Hour																								Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
12-Jun	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.4	34.0	10.6	12.8	2.1	99.9
13-Jun	9.8	13.5	5.7	8.8	8.3	10.4	13.0	2.1	1.6	0.0	0.5	1.0	4.7	3.1	4.7	1.0	1.0	2.6	4.1	1.0	0.0	0.5	0.5	2.1	100.0
14-Jun	3.2	8.2	6.3	7.6	6.3	7.6	6.3	0.0	12.0	3.2	0.6	1.3	1.9	1.3	2.5	5.1	2.5	3.8	5.1	3.2	5.1	2.5	1.3	3.2	100.1
15-Jun	11.7	7.8	7.8	6.8	4.4	2.9	12.1	1.5	0.0	6.8	0.5	1.0	0.5	3.9	5.8	2.4	1.0	1.0	9.7	4.9	0.0	0.5	1.0	6.3	100.3
16-Jun	6.2	6.5	8.5	3.6	2.6	1.0	1.6	2.0	2.9	5.2	3.6	0.3	2.3	3.9	5.5	4.9	2.9	3.3	5.9	5.9	2.3	10.7	3.9	4.6	100.1
17-Jun	12.5	8.6	8.9	11.5	6.9	8.6	2.3	2.6	2.6	3.6	2.6	0.7	1.3	3.3	7.9	2.0	0.7	0.0	0.7	0.3	1.3	2.6	5.3	3.3	100.1
18-Jun	3.7	8.9	24.8	5.1	7.5	3.3	2.3	1.4	0.9	2.8	1.9	3.3	0.9	5.1	3.3	0.0	3.3	4.2	5.6	0.5	2.8	3.7	2.3	2.3	99.9
19-Jun	4.8	23.5	18.0	6.4	3.2	6.7	2.6	1.4	1.2	0.6	4.6	1.2	2.9	1.2	1.2	2.6	2.0	0.9	0.9	0.3	0.6	0.6	0.3	12.8	100.3
20-Jun	1.8	9.0	11.0	8.9	10.3	2.3	3.0	0.5	0.2	0.2	2.6	1.1	1.3	3.4	3.8	0.3	0.8	2.1	1.1	3.0	1.0	3.8	9.3	13.8	100.1
21-Jun	10.5	7.4	4.5	7.6	6.9	15.3	12.5	1.3	1.6	1.8	1.1	1.6	0.7	1.3	3.6	2.9	5.8	3.1	2.9	0.7	1.4	2.5	1.6	1.4	100.0
22-Jun	5.0	5.0	13.8	11.3	13.4	6.9	3.8	4.4	6.9	0.9	0.9	1.9	0.9	3.8	1.3	0.0	0.6	3.4	1.6	0.3	3.8	0.9	4.1	5.3	100.2
23-Jun	2.6	8.9	6.6	2.3	2.9	2.3	0.6	3.2	1.1	4.3	4.0	5.2	0.6	5.5	2.6	2.9	1.1	1.1	7.8	5.2	8.9	9.8	6.6	4.0	100.1
24-Jun	4.1	8.7	5.9	5.9	5.9	11.0	9.6	0.7	0.6	1.1	3.1	4.4	2.6	1.8	1.7	2.4	1.3	1.5	2.2	8.1	6.1	2.8	4.1	4.6	100.2
25-Jun	5.5	7.2	14.4	5.9	2.8	1.9	4.2	7.4	5.5	6.8	3.2	3.2	4.0	2.1	0.8	2.1	2.1	1.9	1.5	1.9	2.3	4.7	4.5	4.3	100.2
26-Jun	3.9	7.9	8.3	8.5	2.5	2.5	1.8	1.2	3.0	3.3	2.5	2.2	2.1	1.1	1.9	1.2	3.6	2.0	1.2	3.3	10.8	9.1	7.6	8.6	100.1
27-Jun	4.5	5.7	4.5	5.2	3.5	3.3	1.5	1.6	3.7	6.3	4.5	4.4	7.3	5.4	4.5	3.4	3.6	3.5	3.0	2.3	5.7	6.0	2.5	4.0	99.9
28-Jun	4.6	5.0	3.8	4.1	3.5	3.3	3.4	4.1	6.8	8.8	4.7	3.0	2.7	3.4	2.1	2.5	2.2	1.6	1.6	1.8	3.8	9.7	7.3	6.3	100.1
29-Jun	6.3	6.9	5.1	4.3	4.0	4.0	4.2	4.4	3.8	4.2	6.4	4.9	2.9	2.4	3.6	3.6	2.5	1.7	2.2	1.9	2.4	5.9	5.8	6.5	99.9
30-Jun	4.1	6.7	6.8	6.1	5.5	5.7	3.3	3.2	2.7	2.8	4.2	7.6	5.9	3.5	2.8	3.4	4.6	2.6	1.8	2.0	2.3	4.0	4.8	3.6	100.0
01-Jul	5.0	3.5	5.0	4.4	5.6	5.5	4.6	3.1	3.3	3.5	3.4	4.2	7.9	6.3	4.4	5.8	4.4	3.8	2.8	2.4	3.2	3.2	2.8	2.1	100.2
02-Jul	6.9	3.6	3.8	5.2	4.4	2.6	1.3	3.8	1.8	2.4	3.1	6.0	6.4	6.7	7.5	4.2	4.3	3.1	2.1	2.4	1.7	4.6	5.4	6.7	100.0
03-Jul	2.6	2.7	1.9	1.3	1.8	2.5	2.4	2.2	0.9	1.4	1.7	2.5	2.3	3.1	3.9	6.0	4.5	2.9	3.0	6.2	10.3	10.3	13.7	10.1	100.2
04-Jul	3.9	7.6	8.0	6.6	5.7	4.0	6.9	5.0	3.4	3.2	4.4	3.5	3.0	2.0	4.3	4.5	9.1	4.0	1.5	2.2	1.9	1.7	2.3	1.4	100.1
05-Jul	6.4	7.6	6.5	7.1	4.4	3.5	2.3	2.6	2.8	2.6	1.4	2.9	1.8	3.0	2.7	4.2	6.9	1.6	2.3	1.8	6.4	4.2	6.4	8.5	99.9
06-Jul	2.9	2.9	5.9	7.7	8.5	5.1	2.4	3.8	5.2	3.6	3.5	1.5	2.3	3.7	2.8	5.2	4.5	8.1	4.4	1.5	2.5	3.0	3.9	5.0	99.9
07-Jul	3.0	2.6	2.8	7.6	11.3	9.8	4.9	4.7	4.7	4.6	3.9	2.5	2.3	2.5	5.1	6.3	3.8	5.0	4.1	0.8	0.5	2.5	2.7	2.1	100.1
08-Jul	2.7	3.4	3.2	5.0	11.1	14.2	7.3	4.6	1.5	2.8	2.8	2.3	2.2	4.0	5.6	5.2	5.6	3.2	5.6	1.6	0.9	1.8	1.8	1.6	100.0
09-Jul	3.8	4.5	2.6	1.8	2.8	5.8	5.4	2.7	1.2	3.7	4.9	3.2	2.5	4.3	3.2	2.4	2.9	3.8	10.1	4.7	2.8	4.7	8.6	7.6	100.0
10-Jul	2.8	2.3	2.7	4.0	6.1	7.7	13.1	8.8	3.6	3.7	5.6	5.4	3.7	4.4	4.0	3.1	2.8	1.9	2.2	4.0	2.5	1.1	1.9	2.5	99.9
11-Jul	9.6	7.5	1.9	5.6	3.0	2.6	2.1	8.9	5.0	4.0	3.0	2.8	5.0	6.1	2.3	3.9	3.4	4.1	1.8	2.6	5.0	3.9	3.5	2.5	100.1
12-Jul	4.2	4.6	4.8	5.3	3.8	7.6	2.5	1.9	5.5	7.2	3.2	2.9	3.0	2.3	4.2	3.2	3.6	3.6	6.1	4.8	3.2	4.8	5.0	2.7	100.0
13-Jul	2.8	3.1	3.7	1.9	3.8	3.6	3.4	4.0	4.4	6.3	3.9	2.3	4.3	4.8	4.4	3.6	3.6	3.3	1.9	4.8	7.1	10.3	4.9	3.7	99.9
14-Jul	4.0	3.6	3.4	2.8	1.6	1.2	2.3	2.8	4.7	5.2	4.4	1.9	3.6	6.0	3.6	3.1	4.6	3.5	5.5	3.5	5.7	9.2	9.5	4.3	100.0
15-Jul	0.9	1.6	2.9	1.3	4.2	3.4	3.5	5.7	7.3	5.6	5.0	8.3	5.6	6.4	9.3	3.4	2.7	2.1	3.2	2.9	5.5	4.1	3.1	2.0	100.0
16-Jul	6.9	2.7	3.6	4.6	3.4	4.4	3.6	3.2	4.4	3.9	2.4	5.4	5.3	4.0	2.7	5.0	5.4	3.0	3.2	2.7	1.1	3.2	4.7	11.0	99.8
17-Jul	1.6	1.3	1.1	1.4	1.4	1.7	1.2	1.2	1.6	2.4	2.7	3.7	2.9	5.3	6.9	5.2	8.0	11.7	14.6	9.8	3.3	2.8	4.8	3.3	99.9
18-Jul	7.4	6.2	4.3	1.8	2.3	1.8	1.2	9.8	6.3	3.9	3.2	3.8	3.4	4.3	6.2	6.5	3.8	2.2	2.9	3.1	4.0	4.3	3.5	4.0	100.2
19-Jul	5.2	9.8	8.5	4.5	3.4	5.9	7.9	6.7	3.9	2.7	3.1	3.6	2.8	2.0	2.2	5.0	6.1	2.4	2.1	2.2	2.9	2.2	2.8	2.0	99.9
20-Jul	2.0	2.7	3.5	6.4	6.1	4.1	4.0	4.3	7.8	7.3	4.0	1.8	3.7	2.6	3.2	5.1	6.4	9.4	4.8	3.2	2.2	1.7	1.6	1.8	99.7
21-Jul	2.4	1.6	2.6	3.0	4.6	4.9	5.3	5.7	4.6	6.4	5.3	5.3	3.3	3.2	2.2	5.3	4.9	5.1	4.2	5.3	4.2	3.9	4.5	2.2	100.0

-Continued-

Counts by Hour

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total
22-Jul	2.8	3.0	2.6	3.1	3.8	7.7	8.7	5.2	2.8	3.5	4.4	5.6	3.3	3.0	1.5	4.0	4.4	4.4	5.4	5.5	3.9	3.1	5.0	3.4	100.1
23-Jul	1.9	1.1	2.4	3.2	4.1	10.2	12.6	6.1	3.2	2.5	2.8	4.5	3.7	1.3	2.7	3.3	1.9	2.4	5.1	9.4	4.2	3.2	4.3	4.0	100.1
24-Jul	1.9	1.1	1.3	0.8	1.0	1.3	5.5	6.5	4.0	4.2	6.2	4.9	4.0	3.0	4.1	4.0	3.0	5.0	7.8	14.6	5.2	1.6	4.1	4.7	99.8
25-Jul	4.4	4.5	3.1	2.5	2.4	2.8	3.1	6.9	7.1	2.4	1.8	5.0	2.7	3.2	2.6	4.8	5.5	6.5	4.8	3.5	10.1	5.8	2.2	2.3	100.0
26-Jul	3.9	3.4	3.7	2.5	3.4	2.1	3.4	2.2	4.0	7.3	3.5	4.6	4.9	3.2	4.3	4.3	5.5	4.3	2.7	2.4	4.4	9.5	7.3	3.7	100.5
27-Jul	2.5	3.1	2.0	1.5	0.9	1.6	2.8	2.4	1.6	2.1	7.3	2.9	4.2	2.3	4.4	4.4	9.3	3.7	3.3	4.8	3.8	7.9	16.7	4.7	100.2
28-Jul	0.8	0.9	1.0	1.2	0.7	1.9	3.9	3.5	3.5	6.6	4.7	7.7	7.0	6.1	6.6	2.6	5.7	4.5	2.5	1.6	4.7	5.7	11.7	5.1	100.2
29-Jul	1.2	1.9	2.1	2.5	2.4	3.0	5.1	4.6	4.9	4.1	4.1	4.6	12.1	9.0	7.2	4.2	3.2	4.7	3.5	3.2	2.9	3.8	3.5	2.2	100.0
30-Jul	1.2	0.6	0.7	0.6	1.3	3.3	6.8	5.1	3.9	4.2	2.8	2.6	2.1	7.5	4.7	4.0	6.5	5.6	6.3	5.5	9.3	6.2	3.8	5.5	100.1
31-Jul	3.1	1.5	0.8	1.0	2.0	7.3	7.8	5.5	5.1	6.9	5.3	3.5	3.4	2.8	3.5	4.2	3.5	5.4	4.7	3.8	3.1	7.6	4.9	3.2	99.9
01-Aug	2.9	3.4	2.1	1.1	1.8	6.4	8.7	6.3	7.4	4.4	4.5	3.5	2.2	2.2	3.4	3.9	5.4	6.9	5.3	6.3	4.8	3.1	2.8	1.2	100.0
02-Aug	2.2	2.0	1.5	1.5	2.3	4.0	10.6	9.4	8.2	6.4	5.7	6.3	3.3	3.3	3.8	3.5	3.3	3.4	4.5	3.8	3.5	2.5	2.9	1.8	99.7
03-Aug	2.2	1.8	2.3	0.7	1.2	3.6	5.0	8.2	6.5	9.4	7.2	5.8	4.4	2.2	2.7	1.9	4.4	4.4	5.3	3.7	5.4	6.7	3.1	2.1	100.2
04-Aug	3.5	1.5	2.0	0.6	2.1	1.3	2.6	1.2	5.1	5.5	4.0	3.3	4.2	3.2	5.4	3.6	4.9	5.5	8.6	5.1	8.5	7.4	6.7	4.4	100.2
05-Aug	2.5	1.7	0.6	0.8	1.1	1.1	3.2	4.4	4.3	5.6	5.4	6.4	2.6	2.6	4.3	4.7	6.5	4.6	5.5	8.8	6.4	8.6	5.2	3.2	100.1
06-Aug	3.1	2.3	2.2	1.2	1.0	2.2	3.3	6.2	4.4	8.3	9.4	4.1	5.7	4.0	3.4	4.4	5.1	6.2	4.1	4.1	4.2	4.3	4.0	2.4	99.6
07-Aug	4.2	1.9	0.5	1.9	0.7	1.7	4.1	2.4	5.1	5.9	6.6	5.8	5.1	5.1	5.2	4.6	4.2	7.3	2.7	5.9	4.7	9.1	2.5	2.9	100.1
08-Aug	3.0	3.0	2.8	1.2	1.8	3.4	4.2	8.3	5.6	5.5	5.8	5.8	4.8	7.8	4.8	3.4	1.9	3.7	2.8	5.3	4.6	4.1	3.7	2.8	100.1
09-Aug	2.4	1.0	1.3	1.6	0.7	0.4	3.4	3.1	2.2	4.7	2.8	3.6	3.3	7.1	8.4	6.4	5.3	4.1	3.1	7.6	9.8	6.8	8.3	2.4	99.8
10-Aug	3.0	2.6	3.7	1.6	1.1	2.4	2.7	4.4	8.2	6.5	5.3	7.5	5.8	5.5	5.5	6.2	3.6	5.6	4.2	3.7	2.9	3.4	2.7	1.9	100.0
11-Aug	1.5	2.2	1.9	1.9	1.8	4.0	3.2	7.5	4.1	4.4	4.4	4.7	3.8	7.0	6.6	9.5	3.4	4.4	9.4	5.1	3.5	2.5	2.1	1.0	99.9
Total	3.4	3.9	3.8	3.7	4.2	4.8	5.0	4.6	4.2	4.3	4.1	4.0	3.8	4.0	4.3	4.3	4.7	4.4	4.3	3.9	3.9	4.4	4.5	3.7	100.2

Appendix A.17. Kasilof River north bank sonar counts by sector, 12 June through 11 August 1994.

Counts by Sector													Daily Total	Cum Total
Date	1	2	3	4	5	6	7	8	9	10	11	12		
12-Jun	2	1	2	8	2	5	6	6	3	8	3	3	49	49
13-Jun	16	14	16	30	16	18	17	31	10	9	7	22	206	255
14-Jun	14	15	32	53	25	22	15	23	17	15	13	24	268	523
15-Jun	13	33	48	70	20	10	17	23	18	8	10	15	285	808
16-Jun	28	80	51	73	30	27	27	41	27	13	10	11	418	1,226
17-Jun	41	59	52	59	19	19	27	23	13	8	11	18	349	1,575
18-Jun	31	80	73	60	32	34	33	28	15	18	6	19	429	2,004
19-Jun	21	56	44	50	33	13	18	27	13	6	6	13	300	2,304
20-Jun	39	41	84	68	19	33	23	38	13	14	15	26	413	2,717
21-Jun	40	68	85	48	18	19	25	20	14	12	9	17	375	3,092
22-Jun	35	95	165	80	47	31	27	41	31	23	11	27	613	3,705
23-Jun	126	120	207	89	53	45	39	33	21	26	9	19	787	4,492
24-Jun	216	218	281	102	71	45	33	39	27	21	17	16	1,086	5,578
25-Jun	343	343	406	158	106	65	34	20	19	20	22	27	1,563	7,141
26-Jun	454	439	418	184	83	60	39	14	12	17	15	7	1,742	8,883
27-Jun	1,028	712	503	179	99	50	28	26	16	17	10	16	2,684	11,567
28-Jun	262	361	1,480	864	400	290	138	112	105	85	51	29	4,177	15,744
29-Jun	85	480	2,496	1,158	422	318	164	155	131	90	45	19	5,563	21,307
30-Jun	152	528	2,183	823	283	194	155	115	65	38	22	25	4,583	25,890
01-Jul	43	221	1,130	511	170	106	49	46	25	23	10	5	2,339	28,229
02-Jul	13	27	93	72	51	32	11	22	6	10	6	7	350	28,579
03-Jul	106	291	993	321	135	76	46	64	31	19	11	5	2,098	30,677
04-Jul	86	360	917	297	138	85	64	55	39	30	16	11	2,098	32,775
05-Jul	35	136	496	136	59	57	38	34	11	10	7	4	1,023	33,798
06-Jul	148	1,275	2,511	444	137	103	105	66	26	14	6	6	4,841	38,639
07-Jul	278	2,237	3,237	528	198	105	98	72	34	32	11	31	6,861	45,500
08-Jul	262	1,551	2,631	362	132	103	106	62	40	34	13	60	5,356	50,856
09-Jul	59	375	936	247	82	55	66	60	17	22	13	11	1,943	52,799
10-Jul	47	648	1,775	644	225	87	90	84	41	40	27	20	3,728	56,527
11-Jul	36	200	442	219	117	55	64	66	24	28	14	14	1,279	57,806
12-Jul	16	151	395	186	66	47	39	48	12	12	9	11	992	58,798
13-Jul	52	262	803	277	118	67	57	45	23	20	7	18	1,749	60,547
14-Jul	84	570	1,338	299	128	55	68	73	19	21	11	2	2,668	63,215
15-Jul	150	637	2,236	882	358	140	117	128	44	37	29	11	4,769	67,984
16-Jul	158	195	659	368	235	69	49	64	37	28	31	18	1,911	69,895
17-Jul	207	453	1,558	629	265	85	76	129	81	70	54	35	3,642	73,537
18-Jul	106	506	1,325	632	242	72	81	97	67	72	69	21	3,290	76,827
19-Jul	57	372	865	353	122	57	45	59	38	30	49	24	2,071	78,898
20-Jul	42	287	803	363	123	42	61	73	25	17	22	21	1,879	80,777
21-Jul	84	275	382	174	82	44	24	37	23	28	22	4	1,179	81,956
22-Jul	46	129	159	49	52	24	14	18	6	6	15	8	526	82,482
23-Jul	51	121	99	36	29	31	16	10	10	5	13	5	426	82,908
24-Jul	63	133	142	36	32	21	11	11	10	5	12	8	484	83,392
25-Jul	43	94	78	45	35	28	22	8	3	13	18	25	412	83,804
26-Jul	44	101	105	38	20	21	25	16	6	7	17	18	418	84,222

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Counts by Sector													Daily Total	Cum Total
Date	1	2	3	4	5	6	7	8	9	10	11	12		
27-Jul	172	156	124	42	17	24	14	12	13	15	13	19	621	84,843
28-Jul	242	182	147	35	23	23	10	13	18	11	5	23	732	85,575
29-Jul	310	223	166	45	31	36	10	23	13	22	7	33	919	86,494
30-Jul	342	258	154	74	34	41	26	25	20	35	23	39	1,071	87,565
31-Jul	490	384	220	91	71	53	32	28	18	28	29	65	1,509	89,074
01-Aug	430	342	267	131	74	95	28	38	34	69	30	66	1,604	90,678
02-Aug	251	146	158	72	35	48	15	33	24	70	41	55	978	91,656
03-Aug	168	55	58	33	26	27	16	14	3	19	14	59	492	92,148
04-Aug	66	46	67	29	31	36	10	22	16	19	17	53	412	92,560
05-Aug	102	66	58	33	23	21	14	8	12	20	15	15	387	92,947
06-Aug	64	59	70	37	30	44	19	18	13	17	6	32	409	93,356
07-Aug	104	65	34	42	32	27	4	5	7	6	5	15	346	93,702
08-Aug	94	45	23	19	20	15	11	14	7	20	15	40	323	94,025
09-Aug	140	92	61	30	24	44	9	9	13	11	11	54	498	94,523
10-Aug	109	80	91	38	58	60	35	21	15	30	17	53	607	95,130
11-Aug	115	130	104	40	52	59	21	17	10	20	13	31	612	95,742
Total	8,461	17,679	36,536	13,095	5,740	3,618	2,581	2,562	1,504	1,493	1,065	1,408	95,742	

Appendix A.18. Kasilof River south bank sonar counts by sector, 12 June through 11 August 1994.

Counts by Sector													Daily Total	Cum Total
Date	1	2	3	4	5	6	7	8	9	10	11	12		
12-Jun	7	2	1	0	0	0	1	2	5	3	6	20	47	47
13-Jun	11	7	2	7	2	4	11	13	17	20	33	66	193	240
14-Jun	1	10	1	5	7	10	14	9	11	21	9	60	158	398
15-Jun	9	4	5	6	2	13	18	14	16	19	18	82	206	604
16-Jun	14	10	10	8	7	27	18	14	15	25	27	132	307	911
17-Jun	14	11	17	6	6	7	9	15	21	31	33	134	304	1,215
18-Jun	15	14	18	11	14	12	29	20	22	21	12	26	214	1,429
19-Jun	47	57	27	31	37	27	18	19	5	18	29	30	345	1,774
20-Jun	59	169	55	46	31	51	38	40	18	29	22	52	610	2,384
21-Jun	29	214	51	39	34	24	34	15	21	32	28	33	554	2,938
22-Jun	36	61	14	13	26	48	30	29	22	16	11	14	320	3,258
23-Jun	11	25	26	25	48	74	44	26	15	13	15	26	348	3,606
24-Jun	31	56	46	52	86	91	63	40	25	24	13	16	543	4,149
25-Jun	41	94	51	51	61	88	38	44	12	8	12	29	529	4,678
26-Jun	33	167	68	132	132	127	59	77	34	29	25	26	909	5,587
27-Jun	143	526	230	308	322	238	114	96	42	34	19	31	2,103	7,690
28-Jun	135	687	511	476	301	274	183	170	67	85	91	95	3,075	10,765
29-Jun	39	434	623	593	367	321	186	184	87	140	134	193	3,301	14,066
30-Jun	124	954	1,036	845	464	435	225	228	118	224	206	226	5,085	19,151
01-Jul	101	681	752	498	314	380	226	236	123	193	136	208	3,848	22,999
02-Jul	8	63	158	157	90	106	49	57	30	28	39	54	839	23,838
03-Jul	120	385	786	607	321	291	142	158	78	89	127	166	3,270	27,108
04-Jul	192	956	1,537	1,273	555	555	300	267	132	128	130	184	6,209	33,317
05-Jul	29	166	281	219	110	95	60	68	42	40	35	50	1,195	34,512
06-Jul	105	733	980	679	310	229	127	146	88	86	97	115	3,695	38,207
07-Jul	199	1,039	1,348	884	543	467	286	350	178	180	153	279	5,906	44,113
08-Jul	204	912	902	513	331	275	190	217	99	138	109	204	4,094	48,207
09-Jul	40	265	359	327	212	140	72	124	50	66	67	82	1,804	50,011
10-Jul	66	511	682	487	377	251	148	167	96	84	99	163	3,131	53,142
11-Jul	31	73	154	94	103	75	52	57	29	38	44	50	800	53,942
12-Jul	11	64	94	84	63	44	32	43	16	28	16	30	525	54,467
13-Jul	47	205	216	134	74	47	35	24	17	31	25	44	899	55,366
14-Jul	77	412	338	162	81	56	28	22	23	26	24	39	1,288	56,654
15-Jul	170	1,097	736	393	182	165	95	80	25	55	51	83	3,132	59,786
16-Jul	27	135	116	80	66	83	46	22	23	26	28	46	698	60,484
17-Jul	359	1,458	1,431	848	398	245	211	126	55	42	72	94	5,339	65,823
18-Jul	268	462	814	597	358	268	170	99	43	35	59	57	3,230	69,053
19-Jul	234	325	538	491	239	132	75	33	14	10	30	31	2,152	71,205
20-Jul	480	358	359	331	167	88	33	21	7	6	12	25	1,887	73,092
21-Jul	161	170	270	332	230	149	70	15	7	12	12	13	1,441	74,533
22-Jul	234	165	202	223	142	68	23	18	4	6	6	12	1,103	75,636
23-Jul	210	112	208	246	97	36	12	7	4	7	7	4	950	76,586
24-Jul	407	395	472	387	130	49	26	12	7	9	10	26	1,930	78,516
25-Jul	294	268	337	396	116	42	24	12	2	10	7	23	1,531	80,047
26-Jul	51	145	199	273	125	56	49	49	12	18	14	15	1,006	81,053

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Counts by Sector														
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total	Cum Total
27-Jul	69	338	172	151	91	38	24	26	7	17	22	8	963	82,016
28-Jul	107	612	416	237	145	50	49	23	16	24	25	58	1,762	83,778
29-Jul	190	850	1,002	494	293	65	66	63	30	28	31	58	3,170	86,948
30-Jul	131	1,559	1,141	326	177	40	53	47	29	42	47	35	3,627	90,575
31-Jul	125	1,472	1,040	299	151	81	79	75	27	21	16	30	3,416	93,991
01-Aug	303	2,169	1,819	553	317	101	106	77	21	38	26	54	5,584	99,575
02-Aug	112	535	638	301	161	97	103	90	38	45	50	53	2,223	101,798
03-Aug	97	189	340	246	155	78	71	40	15	21	20	14	1,286	103,084
04-Aug	112	177	321	173	80	43	30	30	28	11	16	19	1,040	104,124
05-Aug	153	238	275	156	69	19	29	33	13	8	13	26	1,032	105,156
06-Aug	122	156	226	140	77	28	44	31	17	19	18	23	901	106,057
07-Aug	72	122	132	97	32	17	11	19	13	24	23	29	591	106,648
08-Aug	47	195	117	53	23	9	14	15	11	32	26	25	567	107,215
09-Aug	71	240	112	66	17	11	24	30	24	25	32	23	675	107,890
10-Aug	87	230	145	96	31	19	36	43	22	21	37	37	804	108,694
11-Aug	70	148	117	70	34	21	41	31	26	36	36	51	681	109,375
Total	6,792	24,287	25,074	16,827	9,534	6,980	4,493	4,158	2,114	2,595	2,590	3,931	109,375	

Appendix A.19. Kasilof River north bank sonar counts by sector, 12 June through 11 August 1994. Counts expressed as percentage of daily total.

Counts by Sector													Daily Total
Date	1	2	3	4	5	6	7	8	9	10	11	12	
12-Jun	4.1	2.0	4.1	16.3	4.1	10.2	12.2	12.2	6.1	16.3	6.1	6.1	99.8
13-Jun	7.8	6.8	7.8	14.6	7.8	8.7	8.3	15.0	4.9	4.4	3.4	10.7	100.2
14-Jun	5.2	5.6	11.9	19.8	9.3	8.2	5.6	8.6	6.3	5.6	4.9	9.0	100.0
15-Jun	4.6	11.6	16.8	24.6	7.0	3.5	6.0	8.1	6.3	2.8	3.5	5.3	100.1
16-Jun	6.7	19.1	12.2	17.5	7.2	6.5	6.5	9.8	6.5	3.1	2.4	2.6	100.1
17-Jun	11.7	16.9	14.9	16.9	5.4	5.4	7.7	6.6	3.7	2.3	3.2	5.2	99.9
18-Jun	7.2	18.6	17.0	14.0	7.5	7.9	7.7	6.5	3.5	4.2	1.4	4.4	99.9
19-Jun	7.0	18.7	14.7	16.7	11.0	4.3	6.0	9.0	4.3	2.0	2.0	4.3	100.0
20-Jun	9.4	9.9	20.3	16.5	4.6	8.0	5.6	9.2	3.1	3.4	3.6	6.3	99.9
21-Jun	10.7	18.1	22.7	12.8	4.8	5.1	6.7	5.3	3.7	3.2	2.4	4.5	100.0
22-Jun	5.7	15.5	26.9	13.1	7.7	5.1	4.4	6.7	5.1	3.8	1.8	4.4	100.2
23-Jun	16.0	15.2	26.3	11.3	6.7	5.7	5.0	4.2	2.7	3.3	1.1	2.4	99.9
24-Jun	19.9	20.1	25.9	9.4	6.5	4.1	3.0	3.6	2.5	1.9	1.6	1.5	100.0
25-Jun	21.9	21.9	26.0	10.1	6.8	4.2	2.2	1.3	1.2	1.3	1.4	1.7	100.0
26-Jun	26.1	25.2	24.0	10.6	4.8	3.4	2.2	0.8	0.7	1.0	0.9	0.4	100.1
27-Jun	38.3	26.5	18.7	6.7	3.7	1.9	1.0	1.0	0.6	0.6	0.4	0.6	100.0
28-Jun	6.3	8.6	35.4	20.7	9.6	6.9	3.3	2.7	2.5	2.0	1.2	0.7	99.9
29-Jun	1.5	8.6	44.9	20.8	7.6	5.7	2.9	2.8	2.4	1.6	0.8	0.3	99.9
30-Jun	3.3	11.5	47.6	18.0	6.2	4.2	3.4	2.5	1.4	0.8	0.5	0.5	99.9
01-Jul	1.8	9.4	48.3	21.8	7.3	4.5	2.1	2.0	1.1	1.0	0.4	0.2	99.9
02-Jul	3.7	7.7	26.6	20.6	14.6	9.1	3.1	6.3	1.7	2.9	1.7	2.0	100.0
03-Jul	5.1	13.9	47.3	15.3	6.4	3.6	2.2	3.1	1.5	0.9	0.5	0.2	100.0
04-Jul	4.1	17.2	43.7	14.2	6.6	4.1	3.1	2.6	1.9	1.4	0.8	0.5	100.2
05-Jul	3.4	13.3	48.5	13.3	5.8	5.6	3.7	3.3	1.1	1.0	0.7	0.4	100.1
06-Jul	3.1	26.3	51.9	9.2	2.8	2.1	2.2	1.4	0.5	0.3	0.1	0.1	100.0
07-Jul	4.1	32.6	47.2	7.7	2.9	1.5	1.4	1.0	0.5	0.5	0.2	0.5	100.1
08-Jul	4.9	29.0	49.1	6.8	2.5	1.9	2.0	1.2	0.7	0.6	0.2	1.1	100.0
09-Jul	3.0	19.3	48.2	12.7	4.2	2.8	3.4	3.1	0.9	1.1	0.7	0.6	100.0
10-Jul	1.3	17.4	47.6	17.3	6.0	2.3	2.4	2.3	1.1	1.1	0.7	0.5	100.0
11-Jul	2.8	15.6	34.6	17.1	9.1	4.3	5.0	5.2	1.9	2.2	1.1	1.1	100.0
12-Jul	1.6	15.2	39.8	18.8	6.7	4.7	3.9	4.8	1.2	1.2	0.9	1.1	99.9
13-Jul	3.0	15.0	45.9	15.8	6.7	3.8	3.3	2.6	1.3	1.1	0.4	1.0	99.9
14-Jul	3.1	21.4	50.1	11.2	4.8	2.1	2.5	2.7	0.7	0.8	0.4	0.1	99.9
15-Jul	3.1	13.4	46.9	18.5	7.5	2.9	2.5	2.7	0.9	0.8	0.6	0.2	100.0
16-Jul	8.3	10.2	34.5	19.3	12.3	3.6	2.6	3.3	1.9	1.5	1.6	0.9	100.0
17-Jul	5.7	12.4	42.8	17.3	7.3	2.3	2.1	3.5	2.2	1.9	1.5	1.0	100.0
18-Jul	3.2	15.4	40.3	19.2	7.4	2.2	2.5	2.9	2.0	2.2	2.1	0.6	100.0
19-Jul	2.8	18.0	41.8	17.0	5.9	2.8	2.2	2.8	1.8	1.4	2.4	1.2	100.1
20-Jul	2.2	15.3	42.7	19.3	6.5	2.2	3.2	3.9	1.3	0.9	1.2	1.1	99.8
21-Jul	7.1	23.3	32.4	14.8	7.0	3.7	2.0	3.1	2.0	2.4	1.9	0.3	100.0
22-Jul	8.7	24.5	30.2	9.3	9.9	4.6	2.7	3.4	1.1	1.1	2.9	1.5	99.9
23-Jul	12.0	28.4	23.2	8.5	6.8	7.3	3.8	2.3	2.3	1.2	3.1	1.2	100.1
24-Jul	13.0	27.5	29.3	7.4	6.6	4.3	2.3	2.3	2.1	1.0	2.5	1.7	100.0
25-Jul	10.4	22.8	18.9	10.9	8.5	6.8	5.3	1.9	0.7	3.2	4.4	6.1	99.9
26-Jul	10.5	24.2	25.1	9.1	4.8	5.0	6.0	3.8	1.4	1.7	4.1	4.3	100.0
27-Jul	27.7	25.1	20.0	6.8	2.7	3.9	2.3	1.9	2.1	2.4	2.1	3.1	100.1
28-Jul	33.1	24.9	20.1	4.8	3.1	3.1	1.4	1.8	2.5	1.5	0.7	3.1	100.1
29-Jul	33.7	24.3	18.1	4.9	3.4	3.9	1.1	2.5	1.4	2.4	0.8	3.6	100.1
30-Jul	31.9	24.1	14.4	6.9	3.2	3.8	2.4	2.3	1.9	3.3	2.1	3.6	99.9
31-Jul	32.5	25.4	14.6	6.0	4.7	3.5	2.1	1.9	1.2	1.9	1.9	4.3	100.0

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Counts by Sector

Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total
01-Aug	26.8	21.3	16.6	8.2	4.6	5.9	1.7	2.4	2.1	4.3	1.9	4.1	99.9
02-Aug	25.7	14.9	16.2	7.4	6.6	4.9	1.5	3.4	2.5	7.2	4.2	5.6	100.1
03-Aug	34.1	11.2	11.8	6.7	5.3	5.5	3.3	2.8	0.6	3.9	2.8	12.0	100.0
04-Aug	16.0	11.2	16.3	7.0	7.5	8.7	2.4	5.3	3.9	4.6	4.1	12.9	99.9
05-Aug	26.4	17.1	15.0	8.5	5.9	5.4	3.6	2.1	3.1	5.2	3.9	3.9	100.1
06-Aug	15.6	14.4	17.1	9.0	7.3	10.8	4.6	4.4	3.2	4.2	1.5	7.8	99.9
07-Aug	30.1	18.8	9.8	12.1	9.2	7.8	1.2	1.4	2.0	1.7	1.4	4.3	99.8
08-Aug	29.1	13.9	7.1	5.9	6.2	4.6	3.4	4.3	2.2	6.2	4.6	12.4	99.9
09-Aug	28.1	18.5	12.2	6.0	4.8	8.8	1.8	1.8	2.6	2.2	2.2	10.8	99.8
10-Aug	18.0	13.2	15.0	6.3	9.6	9.9	5.8	3.5	2.5	4.9	2.8	8.7	100.2
11-Aug	18.8	21.2	17.0	6.5	8.5	9.6	3.4	2.8	1.6	3.3	2.1	5.1	99.9
Total	8.8	18.5	38.2	13.7	6.0	3.8	2.7	2.7	1.6	1.6	1.1	1.5	100.2

Appendix A.20. Kasilof River south bank sonar counts by sector, 12 June through 11 August 1994. Counts expressed as percentage of daily total.

Counts by Sector													Daily Total
Date	1	2	3	4	5	6	7	8	9	10	11	12	
12-Jun	14.9	4.3	2.1	0.0	0.0	0.0	2.1	4.3	10.6	6.4	12.8	42.6	100.1
13-Jun	5.7	3.6	1.0	3.6	1.0	2.1	5.7	6.7	8.8	10.4	17.1	34.2	99.9
14-Jun	0.6	6.3	0.6	3.2	4.4	6.3	8.9	5.7	7.0	13.3	5.7	38.0	100.0
15-Jun	4.4	1.9	2.4	2.9	1.0	6.3	8.7	6.8	7.8	9.2	8.7	39.8	99.9
16-Jun	4.6	3.3	3.3	2.6	2.3	8.8	5.9	4.6	4.9	8.1	8.8	43.0	100.2
17-Jun	4.6	3.6	5.6	2.0	2.0	2.3	3.0	4.9	6.9	10.2	10.9	44.1	100.1
18-Jun	7.0	6.5	8.4	5.1	6.5	5.6	13.6	9.3	10.3	9.8	5.6	12.1	99.8
19-Jun	13.6	16.5	7.8	9.0	10.7	7.8	5.2	5.5	1.4	5.2	8.4	8.7	99.8
20-Jun	9.7	27.7	9.0	7.5	5.1	8.4	6.2	6.6	3.0	4.8	3.6	8.5	100.1
21-Jun	5.2	38.6	9.2	7.0	6.1	4.3	6.1	2.7	3.8	5.8	5.1	6.0	99.9
22-Jun	11.3	19.1	4.4	4.1	8.1	15.0	9.4	9.1	6.9	5.0	3.4	4.4	100.2
23-Jun	3.2	7.2	7.5	7.2	13.8	21.3	12.6	7.5	4.3	3.7	4.3	7.5	100.1
24-Jun	5.7	10.3	8.5	9.6	15.8	16.8	11.6	7.4	4.6	4.4	2.4	2.9	100.0
25-Jun	7.8	17.8	9.6	9.6	11.5	16.6	7.2	8.3	2.3	1.5	2.3	5.5	100.0
26-Jun	3.6	18.4	7.5	14.5	14.5	14.0	6.5	8.5	3.7	3.2	2.8	2.9	100.1
27-Jun	6.8	25.0	10.9	14.6	15.3	11.3	5.4	4.6	2.0	1.6	0.9	1.5	99.9
28-Jun	4.4	22.3	16.6	15.5	9.8	8.9	6.0	5.5	2.2	2.8	3.0	3.1	100.1
29-Jun	1.2	13.1	18.9	18.0	11.1	9.7	5.6	5.6	2.6	4.2	4.1	5.8	99.9
30-Jun	2.4	18.8	20.4	16.6	9.1	8.6	4.4	4.5	2.3	4.4	4.1	4.4	100.0
01-Jul	2.6	17.7	19.5	12.9	8.2	9.9	5.9	6.1	3.2	5.0	3.5	5.4	99.9
02-Jul	1.0	7.5	18.8	18.7	10.7	12.6	5.8	6.8	3.6	3.3	4.6	6.4	99.8
03-Jul	3.7	11.8	24.0	18.6	9.8	8.9	4.3	4.8	2.4	2.7	3.9	5.1	100.0
04-Jul	3.1	15.4	24.8	20.5	8.9	8.9	4.8	4.3	2.1	2.1	2.1	3.0	100.0
05-Jul	2.4	13.9	23.5	18.3	9.2	7.9	5.0	5.7	3.5	3.3	2.9	4.2	99.8
06-Jul	2.8	19.8	26.5	18.4	8.4	6.2	3.4	4.0	2.4	2.3	2.6	3.1	99.9
07-Jul	3.4	17.6	22.8	15.0	9.2	7.9	4.8	5.9	3.0	3.0	2.6	4.7	99.9
08-Jul	5.0	22.3	22.0	12.5	8.1	6.7	4.6	5.3	2.4	3.4	2.7	5.0	100.0
09-Jul	2.2	14.7	19.9	18.1	11.8	7.8	4.0	6.9	2.8	3.7	3.7	4.5	100.1
10-Jul	2.1	16.3	21.8	15.6	12.0	8.0	4.7	5.3	3.1	2.7	3.2	5.2	100.0
11-Jul	3.9	9.1	19.3	11.8	12.9	9.4	6.5	7.1	3.6	4.8	5.5	6.3	100.2
12-Jul	2.1	12.2	17.9	16.0	12.0	8.4	6.1	8.2	3.0	5.3	3.0	5.7	99.9
13-Jul	5.2	22.8	24.0	14.9	8.2	5.2	3.9	2.7	1.9	3.4	2.8	4.9	99.9
14-Jul	6.0	32.0	26.2	12.6	6.3	4.3	2.2	1.7	1.8	2.0	1.9	3.0	100.0
15-Jul	5.4	35.0	23.5	12.5	5.8	5.3	3.0	2.6	0.8	1.8	1.6	2.7	100.0
16-Jul	3.9	19.3	16.6	11.5	9.5	11.9	6.6	3.2	3.3	3.7	4.0	6.6	100.1
17-Jul	6.7	27.3	26.8	15.9	7.5	4.6	4.0	2.4	1.0	0.8	1.3	1.8	100.1
18-Jul	8.3	14.3	25.2	18.5	11.1	8.3	5.3	3.1	1.3	1.1	1.8	1.8	100.1
19-Jul	10.9	15.1	25.0	22.8	11.1	6.1	3.5	1.5	0.7	0.5	1.4	1.4	100.0
20-Jul	25.4	19.0	19.0	17.5	8.9	4.7	1.7	1.1	0.4	0.3	0.6	1.3	99.9
21-Jul	11.2	11.8	18.7	23.0	16.0	10.3	4.9	1.0	0.5	0.8	0.8	0.9	99.9
22-Jul	21.2	15.0	18.3	20.2	12.9	6.2	2.1	1.6	0.4	0.5	0.5	1.1	100.0
23-Jul	22.1	11.8	21.9	25.9	10.2	3.8	1.3	0.7	0.4	0.7	0.7	0.4	99.9
24-Jul	21.1	20.5	24.5	20.1	6.7	2.5	1.3	0.6	0.4	0.5	0.5	1.3	100.0
25-Jul	19.2	17.5	22.0	25.9	7.6	2.7	1.6	0.8	0.1	0.7	0.5	1.5	100.1
26-Jul	5.1	14.4	19.8	27.1	12.4	5.6	4.9	4.9	1.2	1.8	1.4	1.5	100.1
27-Jul	7.2	35.1	17.9	15.7	9.4	3.9	2.5	2.7	0.7	1.8	2.3	0.8	100.0
28-Jul	6.1	34.7	23.6	13.5	8.2	2.8	2.8	1.3	0.9	1.4	1.4	3.3	100.0
29-Jul	6.0	26.8	31.6	15.6	9.2	2.1	2.1	2.0	0.9	0.9	1.0	1.8	100.0
30-Jul	3.6	43.0	31.5	9.0	4.9	1.1	1.5	1.3	0.8	1.2	1.3	1.0	100.2
31-Jul	3.7	43.1	30.4	8.8	4.4	2.4	2.3	2.2	0.8	0.6	0.5	0.9	100.1

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Counts by Sector

Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total
01-Aug	5.4	38.8	32.6	9.9	5.7	1.8	1.9	1.4	0.4	0.7	0.5	1.0	100.1
02-Aug	5.0	24.1	28.7	13.5	7.2	4.4	4.6	4.0	1.7	2.0	2.2	2.4	99.8
03-Aug	7.5	14.7	26.4	19.1	12.1	6.1	5.5	3.1	1.2	1.6	1.6	1.1	100.0
04-Aug	10.8	17.0	30.9	16.6	7.7	4.1	2.9	2.9	2.7	1.1	1.5	1.8	100.0
05-Aug	14.8	23.1	26.6	15.1	6.7	1.8	2.8	3.2	1.3	0.8	1.3	2.5	100.0
06-Aug	13.5	17.3	25.1	15.5	8.5	3.1	4.9	3.4	1.9	2.1	2.0	2.6	99.9
07-Aug	12.2	20.6	22.3	16.4	5.4	2.9	1.9	3.2	2.2	4.1	3.9	4.9	100.0
08-Aug	8.3	34.4	20.6	9.3	4.1	1.6	2.5	2.6	1.9	5.6	4.6	4.4	99.9
09-Aug	10.5	35.6	16.6	9.8	2.5	1.6	3.6	4.4	3.6	3.7	4.7	3.4	100.0
10-Aug	10.8	28.6	18.0	11.9	3.9	2.4	4.5	5.3	2.7	2.6	4.6	4.6	99.9
11-Aug	10.3	21.7	17.2	10.3	5.0	3.1	6.0	4.6	3.8	5.3	5.3	7.5	100.1
Total	6.2	22.2	22.9	15.4	8.7	6.4	4.1	3.8	1.9	2.4	2.4	3.6	100.0

Appendix A.21. Estimated salmon escapement adjacent to the north bank of the Crescent River, 28 June through 8 August 1994.
Species composition of daily sonar counts based on fish wheel catches.^a

Date	Sockeye		Pnk		Chum		Coho		Dolly Varden	
	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
28-Jun	6	6	0	0	0	0	0	0	0	0
29-Jun	19	25	0	0	0	0	0	0	1	1
30-Jun	8	33	0	0	0	0	0	0	0	1
01-Jul	23	56	0	0	0	0	0	0	1	2
02-Jul	35	91	1	1	0	0	0	0	1	3
03-Jul	6	97	0	1	0	0	0	0	0	3
04-Jul	76	173	1	2	0	0	0	0	3	6
05-Jul	83	256	1	3	0	0	0	0	3	9
06-Jul	138	394	1	4	0	0	0	0	6	15
07-Jul	236	630	3	7	0	0	0	0	10	25
08-Jul	414	1,044	5	12	0	0	0	0	17	42
09-Jul	117	1,161	1	13	0	0	0	0	5	47
10-Jul	192	1,353	2	15	0	0	0	0	8	55
11-Jun	455	1,808	6	21	0	0	0	0	18	73
12-Jul	792	2,600	11	32	0	0	0	0	32	105
13-Jul	950	3,550	13	45	0	0	0	0	38	143
14-Jul	905	4,455	13	58	0	0	0	0	36	179
15-Jul	526	4,981	7	65	0	0	0	0	21	200
16-Jul	419	5,400	9	74	6	6	0	0	52	252
17-Jul	1,489	6,889	32	106	22	28	0	0	183	435
18-Jul	522	7,411	11	117	8	36	0	0	64	499
19-Jul	594	8,005	13	130	9	45	0	0	73	572
20-Jul	486	8,491	8	138	20	65	0	0	100	672
21-Jul	82	8,573	2	140	3	68	0	0	17	689
22-Jul	542	9,115	9	149	22	90	0	0	112	801
23-Jul	1,041	10,156	17	166	43	133	0	0	215	1,016
24-Jul	791	10,947	13	179	33	166	0	0	163	1,179
25-Jul	409	11,356	7	186	17	183	0	0	84	1,263
26-Jul	480	11,836	8	194	20	203	0	0	99	1,362
27-Jul	964	12,800	16	210	40	243	0	0	199	1,561
28-Jul	696	13,496	6	216	35	278	0	0	307	1,868
29-Jul	591	14,087	5	221	30	308	0	0	260	2,128
30-Jul	804	14,891	20	241	45	353	0	0	294	2,422
31-Jul	1,227	16,118	31	272	69	422	0	0	448	2,870
01-Aug	994	17,112	34	306	67	489	0	0	177	3,047
02-Aug	767	17,879	14	320	81	570	0	0	188	3,235
03-Aug	287	18,166	5	325	70	640	0	0	336	3,571
04-Aug	406	18,572	5	330	136	776	0	0	336	3,907
05-Aug	550	19,122	11	341	294	1,070	0	0	367	4,274
06-Aug	185	19,307	33	374	383	1,453	19	19	421	4,695
07-Aug	136	19,443	24	398	283	1,736	14	33	310	5,005
08-Aug	233	19,676	39	437	321	2,057	20	53	243	5,248

^a No counts were apportioned to chinook salmon.

Appendix A.22. Estimated salmon escapement adjacent to the south bank of the Crescent River, 28 June through 8 August 1994.
Species composition of daily sonar counts based on fish wheel catches. ^a

Date	Sockeye		Pink		Chum		Coho		Dolly Varden	
	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
28-Jun	14	14	0	0	0	0	0	0	1	1
29-Jun	20	34	0	0	0	0	0	0	1	2
30-Jun	177	211	2	2	0	0	0	0	7	9
01-Jul	89	300	1	3	0	0	0	0	4	13
02-Jul	56	356	1	4	0	0	0	0	2	15
03-Jul	61	417	1	5	0	0	0	0	2	17
04-Jul	252	669	4	9	0	0	0	0	10	27
05-Jul	145	814	2	11	0	0	0	0	6	33
06-Jul	123	937	2	13	0	0	0	0	5	38
07-Jul	271	1,208	4	17	0	0	0	0	11	49
08-Jul	348	1,556	5	22	0	0	0	0	14	63
09-Jul	74	1,630	1	23	0	0	0	0	3	66
10-Jul	144	1,774	2	25	0	0	0	0	6	72
11-Jul	412	2,186	5	30	0	0	0	0	17	89
12-Jul	370	2,556	5	35	0	0	0	0	15	104
13-Jul	378	2,934	5	40	0	0	0	0	15	119
14-Jul	237	3,171	3	43	0	0	0	0	10	129
15-Jul	216	3,387	3	46	0	0	0	0	9	138
16-Jul	163	3,550	4	50	2	2	0	0	20	158
17-Jul	745	4,295	16	66	11	13	0	0	92	250
18-Jul	293	4,588	7	73	4	17	0	0	36	286
19-Jul	297	4,885	6	79	4	21	0	0	37	323
20-Jul	366	5,251	6	85	15	36	0	0	76	399
21-Jul	130	5,381	2	87	5	41	0	0	27	426
22-Jul	284	5,665	5	92	11	52	0	0	59	485
23-Jul	639	6,304	11	103	26	78	0	0	132	617
24-Jul	376	6,680	6	109	15	93	0	0	78	695
25-Jul	235	6,915	4	113	9	102	0	0	49	744
26-Jul	196	7,111	3	116	8	110	0	0	41	785
27-Jul	263	7,374	5	121	11	121	0	0	54	839
28-Jul	251	7,625	2	123	13	134	0	0	110	949
29-Jul	341	7,966	3	126	18	152	0	0	150	1,099
30-Jul	380	8,346	10	136	21	173	0	0	139	1,238
31-Jul	632	8,978	16	152	35	208	0	0	231	1,469
01-Aug	485	9,463	16	168	33	241	0	0	86	1,555
02-Aug	403	9,866	7	175	43	284	0	0	99	1,654
03-Aug	139	10,005	2	177	34	318	0	0	162	1,816
04-Aug	244	10,249	3	180	81	399	0	0	202	2,018
05-Aug	224	10,473	4	184	120	519	0	0	149	2,167
06-Aug	67	10,540	12	196	140	659	7	7	153	2,320
07-Aug	47	10,587	8	204	97	756	5	12	107	2,427
08-Aug	92	10,679	16	220	126	882	8	20	96	2,523

^a No counts were apportioned to chinook salmon.

Appendix A23. Crescent River north bank sora counts by hour, 28 June through 8 August 1994.

Date	Counts by Hour																								Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
28-Jun	0	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
29-Jun	1	2	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	1	1	1	0	0	0	20
30-Jun	1	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	2	0	0	0	8
01-Jul	0	0	0	0	1	5	3	1	0	1	0	0	0	0	1	1	4	0	1	6	0	0	0	0	24
02-Jul	1	0	0	4	2	2	16	7	0	1	0	0	0	0	0	0	1	1	0	1	1	0	0	0	37
03-Jul	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	1	0	0	0	6
04-Jul	1	0	0	5	2	0	0	0	0	0	0	2	0	0	0	1	1	7	3	13	31	7	3	4	80
05-Jul	5	4	11	0	0	1	0	2	1	0	1	0	5	4	2	5	12	5	12	12	4	1	0	0	87
06-Jul	2	0	0	1	0	4	0	0	0	1	2	0	0	2	3	1	14	13	9	45	17	15	13	3	145
07-Jul	3	1	0	1	5	6	2	0	0	0	1	3	0	7	7	9	17	13	31	47	65	23	7	1	249
08-Jul	3	0	0	1	1	1	0	0	2	3	2	4	4	3	1	32	35	24	20	140	93	49	10	8	436
09-Jul	3	2	4	0	0	3	0	2	0	0	2	9	5	11	9	9	7	7	12	5	17	12	2	2	123
10-Jul	1	4	6	13	2	0	1	0	0	6	0	0	0	10	27	21	23	26	21	5	15	5	5	11	202
11-Jul	5	10	1	1	11	0	10	1	12	7	2	4	11	15	18	64	58	32	26	17	36	70	45	23	479
12-Jul	1	6	4	3	12	31	4	6	2	11	29	18	26	40	30	29	45	27	15	7	128	188	133	40	835
13-Jul	5	1	1	0	0	11	1	4	6	11	26	37	15	24	78	86	45	47	17	19	89	222	189	67	1,001
14-Jul	7	12	9	19	19	20	2	20	11	29	40	69	55	68	55	90	46	39	30	24	18	55	147	70	954
15-Jul	20	24	2	19	10	11	6	0	3	12	42	49	32	62	74	38	40	44	16	14	8	3	9	16	554
16-Jul	18	13	0	11	14	15	9	9	6	13	19	23	30	16	31	22	49	41	22	18	6	7	25	69	486
17-Jul	31	32	12	20	24	21	31	41	30	31	99	79	158	156	213	188	134	133	133	109	39	6	4	2	1,726
18-Jul	9	13	18	12	11	11	6	20	19	3	6	16	48	56	53	102	78	51	32	26	8	5	2	1	606
19-Jul	1	4	14	8	11	15	19	21	16	23	14	30	27	36	44	33	24	65	96	85	60	22	13	8	689
20-Jul	0	0	3	25	24	21	13	11	10	4	13	6	29	16	36	38	43	65	111	71	36	22	11	6	614
21-Jul	3	6	7	1	2	1	0	6	4	0	3	1	3	0	9	8	4	17	0	6	3	16	4	0	104
22-Jul	3	0	25	25	25	24	25	25	2	37	42	21	20	31	45	41	32	24	26	37	47	75	22	31	685
23-Jul	27	9	19	15	23	16	23	28	41	48	50	78	82	54	39	27	25	22	72	162	262	107	60	27	1,316
24-Jul	21	23	27	10	2	20	10	31	20	50	50	79	84	53	44	57	48	20	25	35	136	79	49	27	1,000
25-Jul	20	11	5	14	9	18	10	10	19	26	36	26	31	28	28	17	19	20	9	9	27	66	37	22	517
26-Jul	6	6	7	5	7	32	22	34	16	13	33	52	47	25	20	42	21	22	8	15	15	63	54	42	607
27-Jul	16	8	22	2	3	11	16	7	8	4	58	43	28	58	57	103	29	48	51	19	73	237	171	147	1,219
28-Jul	28	19	8	4	6	20	21	15	11	41	36	51	82	44	94	93	96	20	52	45	13	22	129	94	1,044
29-Jul	43	26	2	19	13	81	44	26	13	20	50	41	50	58	51	56	29	25	22	31	19	44	48	75	886
30-Jul	25	18	14	29	38	63	54	17	12	13	79	88	67	89	70	28	62	67	24	25	30	53	65	133	1,163
31-Jul	40	18	33	26	42	74	76	99	79	166	96	54	48	111	144	145	91	120	96	60	37	47	34	39	1,775
01-Aug	28	16	12	7	26	48	89	33	54	58	80	95	104	132	82	68	76	63	34	55	43	34	19	16	1,272
02-Aug	6	5	7	19	20	38	56	75	79	67	45	43	34	33	47	54	47	81	56	66	77	51	30	14	1,050
03-Aug	15	8	9	30	43	58	94	32	11	10	20	32	48	40	57	35	19	40	30	18	19	8	12	10	698
04-Aug	2	1	3	1	12	13	48	58	60	57	30	39	43	51	29	40	77	35	75	80	67	37	21	4	883
05-Aug	0	2	2	4	6	36	77	66	55	33	21	29	65	64	98	50	71	48	113	146	116	81	26	13	1,222
06-Aug	4	4	4	7	5	38	51	43	44	45	28	40	39	62	54	54	39	45	74	96	102	81	46	36	1,041
07-Aug	35	5	7	7	11	56	33	29	17	13	7	11	14	22	73	59	54	51	66	59	33	42	38	25	767
08-Aug	21	10	9	13	12	14	17	39	22	38	32	19	34	66	62	37	49	29	16	77	95	69	46	30	856
Total	461	327	309	386	454	839	889	818	685	910	1,095	1,191	1,368	1,547	1,785	1,783	1,564	1,437	1,459	1,707	1,889	1,924	1,529	1,116	27,472

Appendix A24. Crescent River south bank sonar counts by hour, 28 June through 8 August 1994.

Date	Counts by Hour																								Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
28-Jun	0	4	4	3	1	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	15
29-Jun	0	4	3	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	6	1	4	0	21
30-Jun	3	0	1	0	0	0	0	1	0	0	0	0	8	10	65	29	9	5	34	10	8	2	0	1	186
01-Jul	0	2	0	0	0	0	0	7	0	6	2	0	0	11	1	22	2	22	2	0	7	6	2	2	94
02-Jul	6	0	0	5	4	0	0	0	0	0	0	0	0	0	0	6	10	4	12	8	0	0	0	4	59
03-Jul	1	1	4	1	0	1	0	0	0	0	0	0	0	1	3	0	0	3	9	14	12	9	5	0	64
04-Jul	2	0	3	13	2	0	4	0	0	0	3	4	1	1	3	0	27	37	93	34	22	14	2	1	266
05-Jul	0	0	1	3	0	0	1	0	0	0	0	0	0	3	21	41	15	19	29	16	2	2	0	0	153
06-Jul	1	0	1	0	0	0	0	2	8	0	0	0	4	5	7	14	19	13	13	22	11	7	1	2	130
07-Jul	1	0	0	0	1	2	0	0	0	0	0	3	3	7	5	16	24	5	51	87	60	14	3	4	286
08-Jul	2	1	3	2	1	0	3	1	4	0	2	7	26	9	15	29	28	19	23	115	58	9	6	4	367
09-Jul	1	1	1	0	1	1	0	0	0	2	0	2	6	4	3	5	26	9	2	4	5	5	0	0	78
10-Jul	1	9	10	5	1	0	0	0	0	4	4	0	0	7	11	4	5	17	39	15	7	6	5	2	152
11-Jul	27	20	2	1	5	1	1	0	1	0	1	9	32	63	71	20	51	43	11	7	10	36	19	3	434
12-Jul	4	2	1	14	3	1	3	2	0	0	3	7	9	56	35	17	50	27	7	5	30	62	35	17	390
13-Jul	3	2	0	2	0	2	1	0	0	0	1	24	29	53	44	36	24	38	3	12	13	69	39	3	398
14-Jul	3	8	0	0	0	2	1	0	4	2	4	10	25	21	28	36	46	4	9	12	5	9	13	8	250
15-Jul	3	2	2	2	3	2	0	0	0	1	1	7	26	24	45	46	22	14	8	9	7	0	1	3	228
16-Jul	2	1	3	2	1	1	0	1	1	1	10	7	15	15	21	16	14	12	28	15	0	8	6	9	189
17-Jul	10	16	7	14	4	26	11	11	13	31	33	76	39	146	70	96	116	11	81	38	14	1	0	0	864
18-Jul	1	2	8	2	5	3	7	5	15	9	15	16	19	34	57	37	22	25	16	20	10	7	2	3	340
19-Jul	1	2	2	4	11	11	10	7	4	7	11	17	24	36	21	19	19	28	35	36	28	5	0	6	344
20-Jul	7	9	10	24	35	18	16	6	11	3	4	1	23	20	35	24	55	54	10	55	13	17	9	4	463
21-Jul	20	20	6	7	10	15	4	2	0	3	0	2	0	0	3	3	1	3	3	23	25	7	2	5	164
22-Jul	2	0	3	0	1	5	0	2	1	0	0	4	9	20	23	25	40	21	27	56	43	40	24	13	359
23-Jul	11	10	9	4	14	2	11	24	19	22	27	38	56	41	30	35	27	14	30	188	137	41	10	8	808
24-Jul	11	6	2	0	0	2	0	0	3	19	52	30	38	29	6	16	24	10	13	16	78	68	32	20	475
25-Jul	15	12	13	10	3	7	1	2	12	8	14	10	26	20	36	12	9	11	12	7	20	24	7	6	297
26-Jul	4	1	0	7	10	3	4	9	3	8	1	12	9	12	18	11	6	10	5	7	16	30	31	31	248
27-Jul	12	2	14	5	4	3	9	10	4	8	4	22	11	26	9	9	11	25	25	2	11	39	27	41	333
28-Jul	15	1	3	1	4	3	3	3	3	12	8	4	10	15	4	48	51	21	19	5	15	29	60	39	376
29-Jul	21	21	2	7	4	12	6	12	8	12	8	24	18	68	51	74	28	17	24	10	12	14	27	32	512
30-Jul	15	12	8	5	10	5	11	4	4	7	27	51	36	14	9	105	104	41	26	8	9	7	9	23	550
31-Jul	7	5	0	5	9	14	23	32	5	32	46	39	127	146	92	32	58	75	59	37	30	22	12	7	914
01-Aug	11	1	0	0	1	3	6	14	26	20	24	63	93	14	105	44	35	42	49	36	17	8	7	1	620
02-Aug	1	4	1	1	6	4	5	23	47	40	44	24	18	33	26	20	56	46	21	35	55	29	6	7	552
03-Aug	3	1	2	1	3	9	15	8	11	22	13	19	22	32	17	6	30	27	36	19	16	21	1	3	337
04-Aug	6	0	7	3	3	24	17	3	38	56	30	6	15	13	14	35	47	43	65	51	14	9	29	2	530
05-Aug	5	0	3	3	7	0	21	23	32	11	8	11	14	12	24	28	58	27	52	76	44	25	11	2	497
06-Aug	6	0	1	9	2	6	28	30	11	30	18	18	17	21	29	13	19	14	10	21	38	12	15	13	379
07-Aug	5	3	1	2	2	0	8	13	32	23	2	29	18	6	7	13	13	11	21	25	7	13	12	0	264
08-Aug	0	1	2	14	14	14	14	14	14	13	15	15	16	7	18	5	11	6	26	27	26	36	24	4	336
Total	249	186	143	181	185	202	245	271	334	412	435	609	840	1,055	1,083	1,048	1,214	873	1,038	1,184	941	765	498	333	14,324

Appendix A25. Crescent River north bank sonar counts by hour, 28 June through 8 August 1994. Counts expressed as percentage of daily total.

Counts by Hour																									
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total
28-Jun	0.0	66.7	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
29-Jun	5.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	5.0	5.0	0.0	0.0	0.0	100.0
30-Jun	12.5	0.0	0.0	37.5	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	25.0	0.0	0.0	0.0	100.0
01-Jul	0.0	0.0	0.0	0.0	4.2	20.8	12.5	4.2	0.0	4.2	0.0	0.0	0.0	0.0	0.0	4.2	4.2	16.7	0.0	4.2	25.0	0.0	0.0	0.0	100.2
02-Jul	2.7	0.0	0.0	10.8	5.4	5.4	43.2	18.9	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	2.7	2.7	0.0	2.7	2.7	0.0	0.0	0.0	99.9
03-Jul	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	16.7	0.0	0.0	0.0	100.0
04-Jul	1.3	0.0	0.0	6.3	2.5	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	1.3	1.3	8.8	3.8	16.3	38.8	8.8	3.8	5.0	100.5
05-Jul	5.7	4.6	12.6	0.0	0.0	1.1	0.0	2.3	1.1	0.0	1.1	0.0	5.7	4.6	2.3	5.7	13.8	5.7	13.8	13.8	4.6	1.1	0.0	0.0	99.6
06-Jul	1.4	0.0	0.0	0.7	0.0	2.8	0.0	0.0	0.0	0.7	1.4	0.0	0.0	1.4	2.1	0.7	9.7	9.0	6.2	31.0	11.7	10.3	9.0	2.1	100.2
07-Jul	1.2	0.4	0.0	0.4	2.0	2.4	0.8	0.0	0.0	0.0	0.4	1.2	0.0	2.8	2.8	3.6	6.8	5.2	12.4	18.9	26.1	9.2	2.8	0.4	99.8
08-Jul	2.7	3.0	0.0	0.2	0.2	0.2	0.0	0.0	0.5	0.7	6.5	0.9	0.9	0.7	0.2	7.3	8.0	5.5	4.6	32.1	21.3	11.2	2.3	1.8	99.8
09-Jul	2.4	1.6	3.3	0.0	0.0	2.4	0.0	1.6	0.0	0.0	1.6	7.3	4.1	8.9	7.3	7.3	5.7	5.7	9.8	4.1	13.8	9.8	1.6	1.6	99.9
10-Jul	0.5	2.0	3.0	6.4	1.0	0.0	0.5	0.0	0.0	3.0	0.0	0.0	0.0	5.0	13.4	10.4	11.4	12.9	10.4	2.5	7.4	2.5	5.4	100.2	
11-Jul	1.0	2.1	0.2	0.2	2.3	0.0	2.1	0.2	2.5	1.5	0.4	0.8	2.3	3.1	3.8	13.4	12.1	6.7	5.4	3.5	7.5	14.6	9.4	4.8	99.9
12-Jul	0.1	0.7	0.5	0.4	1.4	3.7	0.5	0.7	0.2	1.3	3.5	2.2	3.1	4.8	3.6	3.5	5.4	3.2	1.8	0.8	15.3	22.5	15.9	4.8	99.9
13-Jul	0.5	0.1	0.1	0.0	0.0	1.1	0.1	0.4	0.6	1.1	2.6	3.7	1.5	2.4	7.8	8.6	4.5	4.7	1.7	1.9	8.9	22.2	18.9	6.7	100.1
14-Jul	0.7	1.3	0.9	2.0	2.0	2.1	0.2	2.1	1.2	3.0	4.2	7.2	5.8	7.1	5.8	9.4	4.8	4.1	3.1	2.5	1.9	5.8	15.4	7.3	99.9
15-Jul	3.6	4.3	0.4	3.4	1.8	2.0	1.1	0.0	0.5	2.2	7.6	8.8	5.8	11.2	13.4	6.9	7.2	7.9	2.9	2.5	1.4	0.5	1.6	2.9	99.9
16-Jul	3.7	2.7	0.0	2.3	2.9	3.1	1.9	1.9	1.2	2.7	3.9	4.7	6.2	3.3	6.4	4.5	10.1	8.4	4.5	3.7	1.2	1.4	5.1	14.2	100.0
17-Jul	1.8	1.9	0.7	1.2	1.4	1.2	1.8	2.4	1.7	1.8	5.7	4.6	9.2	9.0	12.3	10.9	7.8	7.7	7.7	6.3	2.3	0.3	0.2	0.1	100.0
18-Jul	1.5	2.1	3.0	2.0	1.8	1.8	1.0	3.3	3.1	0.5	1.0	2.6	7.9	9.2	8.7	16.8	12.9	8.4	5.3	4.3	1.3	0.8	0.3	0.2	99.8
19-Jul	0.1	0.6	2.0	1.2	1.6	2.2	2.8	3.0	2.3	3.3	2.0	4.4	3.9	5.2	6.4	4.8	3.5	9.4	13.9	12.3	8.7	3.2	1.9	1.2	99.9
20-Jul	0.0	0.0	0.5	4.1	3.9	3.4	2.1	1.8	1.6	0.7	2.1	1.0	4.7	2.6	5.9	6.2	7.0	10.6	18.1	11.6	5.9	3.6	1.8	1.0	100.2
21-Jul	2.9	5.8	6.7	1.0	1.9	1.0	0.0	5.8	3.8	0.0	2.9	1.0	2.9	0.0	8.7	7.7	3.8	16.3	0.0	5.8	2.9	15.4	3.8	0.0	100.1
22-Jul	0.4	0.0	3.6	3.6	3.6	3.5	3.6	3.6	0.3	5.4	6.1	3.1	2.9	4.5	6.6	6.0	4.7	3.5	3.8	5.4	6.9	10.9	3.2	4.5	99.7
23-Jul	2.1	0.7	1.4	1.1	1.7	1.2	1.7	2.1	3.1	3.6	3.8	5.9	6.2	4.1	3.0	2.1	1.9	1.7	5.5	12.3	19.9	8.1	4.6	2.1	99.9
24-Jul	2.1	2.3	2.7	1.0	0.2	2.0	1.0	3.1	2.0	5.0	5.0	7.9	8.4	5.3	4.4	5.7	4.8	2.0	2.5	3.5	13.6	7.9	4.9	2.7	100.0
25-Jul	3.9	2.1	1.0	2.7	1.7	3.5	1.9	1.9	3.7	5.0	7.0	5.0	6.0	5.4	5.4	3.3	3.7	3.9	1.7	1.7	5.2	12.8	7.2	4.3	100.0
26-Jul	1.0	1.0	1.2	0.8	1.2	5.3	3.6	5.6	2.6	2.1	5.4	8.6	7.7	4.1	3.3	6.9	3.5	3.6	1.3	2.5	2.5	10.4	8.9	6.9	100.0
27-Jul	1.3	0.7	1.8	0.2	0.2	0.9	1.3	0.6	0.7	0.3	4.8	3.5	2.3	4.8	4.7	8.4	2.4	3.9	4.2	1.6	6.0	19.4	14.0	12.1	100.1
28-Jul	2.7	1.8	0.8	0.4	0.6	1.9	2.0	1.4	1.1	3.9	3.4	4.9	7.9	4.2	9.0	8.9	9.2	1.9	5.0	4.3	1.2	2.1	12.4	9.0	100.0
29-Jul	4.9	2.9	0.2	2.1	1.5	9.1	5.0	2.9	1.5	2.3	5.6	4.6	5.6	6.5	5.8	6.3	3.3	2.8	2.5	3.5	2.1	5.0	5.4	8.5	99.9
30-Jul	2.1	1.5	1.2	2.5	3.3	5.4	4.6	1.5	1.0	1.1	6.8	7.6	5.8	7.7	6.0	2.4	5.3	5.8	2.1	2.1	2.6	4.6	5.6	11.4	100.0
31-Jul	2.3	1.0	1.9	1.5	2.4	4.2	4.3	5.6	4.5	9.4	5.4	3.0	2.7	6.3	8.1	8.2	5.1	6.8	5.4	3.4	2.1	2.6	1.9	2.2	100.3
01-Aug	2.2	1.3	0.9	0.6	2.0	3.8	7.0	2.6	4.2	4.6	6.3	7.5	8.2	10.4	6.4	5.3	6.0	5.0	2.7	4.3	3.4	2.7	1.5	1.3	100.2
02-Aug	0.6	0.5	0.7	1.8	1.9	3.6	5.3	7.1	7.5	6.4	4.3	4.1	3.2	3.1	4.5	5.1	4.5	7.7	5.3	6.3	7.3	4.9	2.9	1.3	99.9
03-Aug	2.1	1.1	1.3	4.3	6.2	8.3	13.5	4.8	1.6	1.4	2.9	4.6	6.9	5.7	8.2	5.0	2.7	5.7	4.3	2.6	2.7	1.1	1.7	1.4	99.9
04-Aug	0.2	0.1	0.3	0.1	1.4	1.5	5.4	6.6	8.8	6.5	3.4	4.4	4.9	5.8	3.3	4.5	8.7	4.0	8.5	9.1	7.6	4.2	2.4	0.5	100.2
05-Aug	0.0	0.2	0.2	0.3	0.5	2.9	6.3	5.4	4.5	2.7	1.7	2.4	5.3	5.2	8.0	4.1	5.8	3.9	9.2	11.9	9.5	6.6	2.1	1.1	99.8
06-Aug	0.4	0.4	0.4	0.7	0.5	3.7	4.9	4.1	4.2	4.3	2.7	3.8	3.7	6.0	5.2	5.2	3.7	4.3	7.1	9.2	9.8	7.8	4.4	3.5	100.0
07-Aug	4.6	0.7	0.9	0.9	1.4	7.3	4.3	3.8	2.2	1.7	0.9	1.4	1.8	2.9	9.5	7.7	7.0	6.6	8.6	7.7	4.3	5.5	5.0	3.3	100.0
08-Aug	2.5	1.2	1.1	1.5	1.4	1.6	2.0	4.6	2.6	4.4	3.7	2.2	4.0	7.7	7.2	4.3	5.7	3.4	1.9	9.0	11.1	8.1	5.4	3.5	100.1
Total	1.7	12	1.1	1.4	1.7	3.1	3.2	3.0	2.5	3.3	4.0	4.3	5.0	5.6	6.5	6.5	5.7	5.2	5.3	6.2	6.9	7.0	5.6	4.1	100.1

Appendix A26. Crescent River south bank sonar counts by hour, 28 June through 8 August 1994. Counts expressed as percentage of daily total.

Date	Counts by Hour																								Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
28-Jun	0.0	26.7	26.7	20.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	13.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.1
29-Jun	0.0	19.0	14.3	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	4.8	28.6	4.8	19.0	0.0	100.1
30-Jun	1.6	0.0	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	4.3	5.4	34.9	15.6	4.8	2.7	18.3	5.4	4.3	1.1	0.0	0.5	99.9
01-Jul	0.0	2.1	0.0	0.0	0.0	0.0	0.0	7.4	0.0	6.4	2.1	0.0	0.0	11.7	1.1	23.4	2.1	23.4	2.1	0.0	7.4	6.4	2.1	2.1	99.8
02-Jul	10.2	0.0	0.0	8.5	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.2	16.9	6.8	20.3	13.6	0.0	0.0	0.0	6.8	100.1
03-Jul	1.6	1.6	6.3	1.6	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	4.7	0.0	0.0	4.7	14.1	21.9	18.8	14.1	7.8	0.0	100.4
04-Jul	0.8	0.0	1.1	4.9	0.8	0.0	1.5	0.0	0.0	0.0	1.1	1.5	0.4	0.4	1.1	0.0	10.2	13.9	35.0	12.8	8.3	5.3	0.8	0.4	100.3
05-Jul	0.0	0.0	0.7	2.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	2.0	13.7	26.8	9.8	12.4	19.0	10.5	1.3	1.3	0.0	0.0	100.2
06-Jul	0.8	0.0	0.8	0.0	0.0	0.0	0.0	1.5	6.2	0.0	0.0	0.0	3.1	3.8	5.4	10.8	14.6	10.0	10.0	16.9	8.5	5.4	0.8	1.5	100.1
07-Jul	0.3	0.0	0.0	0.0	0.3	0.7	0.0	0.0	0.0	0.0	0.0	1.0	1.0	2.4	1.7	5.6	8.4	1.7	17.8	30.4	21.0	4.9	1.0	1.4	99.6
08-Jul	0.5	0.3	0.3	0.5	0.3	0.0	0.8	0.3	1.1	0.0	0.5	1.9	7.1	2.5	4.1	7.9	7.6	5.2	6.3	31.3	15.8	2.5	1.6	1.1	100.0
09-Jul	1.3	1.3	1.3	0.0	1.3	1.3	0.0	0.0	0.0	2.6	0.0	2.6	7.7	5.1	3.8	6.4	33.3	11.5	2.6	5.1	6.4	6.4	0.0	0.0	100.0
10-Jul	0.7	5.9	6.6	3.3	0.7	0.0	0.0	0.0	0.0	2.6	2.6	0.0	0.0	4.6	7.2	2.6	3.3	11.2	25.7	9.9	4.6	3.9	3.3	1.3	100.0
11-Jul	6.2	4.6	0.5	0.2	1.2	0.2	0.2	0.0	0.2	0.0	0.2	2.1	7.4	14.5	16.4	4.6	11.8	9.9	2.5	1.6	2.3	8.3	4.4	0.7	100.0
12-Jul	1.0	0.5	0.3	3.6	0.8	0.3	0.8	0.5	0.0	0.0	0.8	1.8	2.3	14.4	9.0	4.4	12.8	6.9	1.8	1.3	7.7	15.9	9.0	4.4	100.3
13-Jul	0.8	0.5	0.0	0.5	0.0	0.5	0.3	0.0	0.0	0.0	0.3	6.0	7.3	13.3	11.1	9.0	6.0	9.5	0.8	3.0	3.3	17.3	9.8	0.8	100.1
14-Jul	1.2	3.2	0.0	0.0	0.0	0.8	0.4	0.0	1.6	0.8	1.6	4.0	10.0	8.4	11.2	14.4	18.4	1.6	3.6	4.8	2.0	3.6	5.2	3.2	100.0
15-Jul	1.3	0.9	0.9	0.9	1.3	0.9	0.0	0.0	0.0	0.4	0.4	3.1	11.4	10.5	19.7	20.2	9.6	6.1	3.5	3.9	3.1	0.0	0.4	1.3	99.8
16-Jul	1.1	0.5	1.6	1.1	0.5	0.5	0.0	0.5	0.5	0.5	5.3	3.7	7.9	7.9	11.1	8.5	7.4	6.3	14.8	7.9	0.0	4.2	3.2	4.8	99.8
17-Jul	1.2	1.9	0.8	1.6	0.5	3.0	1.3	1.3	1.5	3.6	3.8	8.8	4.5	16.9	8.1	11.1	13.4	1.3	9.4	4.4	1.6	0.1	0.0	0.0	100.1
18-Jul	0.3	0.6	2.4	0.6	1.5	0.9	2.1	1.5	4.4	2.6	4.4	4.7	5.6	10.0	16.8	10.9	6.5	7.4	4.7	5.9	2.9	2.1	0.6	0.9	100.3
19-Jul	0.3	0.6	0.6	1.2	3.2	3.2	2.9	2.0	1.2	2.0	3.2	4.9	7.0	10.5	6.1	5.5	5.5	8.1	10.2	10.5	8.1	1.5	0.0	1.7	100.0
20-Jul	1.5	1.9	2.2	5.2	7.6	3.9	3.5	1.3	2.4	0.6	0.9	0.2	5.0	4.3	7.6	5.2	11.9	11.7	2.2	11.9	2.8	3.7	1.9	0.9	100.3
21-Jul	12.2	12.2	3.7	4.3	6.1	9.1	2.4	1.2	0.0	1.8	0.0	1.2	0.0	0.0	1.8	1.8	0.6	1.8	1.8	14.0	15.2	4.3	1.2	3.0	99.7
22-Jul	0.6	0.0	0.8	0.0	0.3	1.4	0.0	0.6	0.3	0.0	0.0	1.1	2.5	5.6	6.4	7.0	11.1	5.8	7.5	15.6	12.0	11.1	6.7	3.6	100.0
23-Jul	1.4	1.2	1.1	0.5	1.7	0.2	1.4	3.0	2.4	2.7	3.3	4.7	6.9	5.1	3.7	4.3	3.3	1.7	3.7	23.3	17.0	5.1	1.2	1.0	99.9
24-Jul	2.3	1.3	0.4	0.0	0.0	0.4	0.0	0.0	0.6	4.0	10.9	6.3	8.0	6.1	1.3	3.4	5.1	2.1	2.7	3.4	16.4	14.3	6.7	4.2	99.9
25-Jul	5.1	4.0	4.4	3.4	1.0	2.4	0.3	0.7	4.0	2.7	4.7	3.4	8.8	6.7	12.1	4.0	3.0	3.7	4.0	2.4	6.7	8.1	2.4	2.0	100.0
26-Jul	1.6	0.4	0.0	2.8	4.0	1.2	1.6	3.6	1.2	3.2	0.4	4.8	3.6	4.8	7.3	4.4	2.4	4.0	2.0	2.8	6.5	12.1	12.5	12.5	99.7
27-Jul	3.6	0.6	4.2	1.5	1.2	0.9	2.7	3.0	1.2	2.4	1.2	6.6	3.3	7.8	2.7	2.7	3.3	7.5	7.5	0.6	3.3	11.7	8.1	12.3	99.9
28-Jul	4.0	0.3	0.8	0.3	1.1	0.8	0.8	0.8	0.8	3.2	2.1	1.1	2.7	4.0	1.1	12.8	13.6	5.6	5.1	1.3	4.0	7.7	16.0	10.4	100.4
29-Jul	4.1	4.1	0.4	1.4	0.8	2.3	1.2	2.3	1.6	2.3	1.6	4.7	3.5	13.3	10.0	14.5	5.5	3.3	4.7	2.0	2.3	2.7	5.3	6.3	100.2
30-Jul	2.7	2.2	1.5	0.9	1.8	0.9	2.0	0.7	0.7	1.3	4.9	9.3	6.5	2.5	1.6	19.1	18.9	7.5	4.7	1.5	1.6	1.3	1.6	4.2	99.9
31-Jul	0.8	0.5	0.0	0.5	1.0	1.5	2.5	3.5	0.5	3.5	5.0	4.3	13.9	16.0	10.1	3.5	6.3	8.2	6.5	4.0	3.3	2.4	1.3	0.8	99.9
01-Aug	1.8	0.2	0.0	0.0	0.2	0.5	1.0	2.3	4.2	3.2	3.9	10.2	15.0	2.3	16.9	7.1	5.6	6.8	7.9	5.8	2.7	1.3	1.1	0.2	100.2
02-Aug	0.2	0.7	0.2	0.2	1.1	0.7	0.9	4.2	8.5	7.2	8.0	4.3	3.3	6.0	4.7	3.6	10.1	8.3	3.8	6.3	10.0	5.3	1.1	1.3	100.0
03-Aug	0.9	0.3	0.6	0.3	0.9	2.7	4.5	2.4	3.3	6.5	3.9	5.6	6.5	9.5	5.0	1.8	8.9	8.0	10.7	5.6	4.7	6.2	0.3	0.9	100.0
04-Aug	1.1	0.0	1.3	0.6	0.6	4.5	3.2	0.6	7.2	10.6	5.7	1.1	2.8	2.5	2.6	6.6	8.9	8.1	12.3	9.6	2.6	1.7	5.5	0.4	100.1
05-Aug	1.0	0.0	0.6	0.6	1.4	0.0	4.2	4.6	6.4	2.2	1.6	2.2	2.8	2.4	4.8	5.6	11.7	5.4	10.5	15.3	8.9	5.0	2.2	0.4	99.8
06-Aug	1.6	0.0	0.3	2.4	0.5	1.6	7.4	7.9	2.9	7.9	4.7	4.2	4.5	5.5	7.7	3.4	5.0	3.7	2.6	5.5	10.0	3.2	4.0	3.4	99.9
07-Aug	1.9	1.1	0.4	0.8	0.8	0.0	3.0	4.9	12.1	8.7	0.8	11.0	6.1	2.3	2.7	4.9	4.9	4.2	8.0	9.5	2.7	4.9	4.5	0.0	100.2
08-Aug	0.0	0.3	0.6	4.1	4.1	4.1	4.1	4.1	4.1	3.8	4.4	4.4	4.7	2.1	5.3	1.5	3.3	1.8	7.7	8.0	7.7	11.2	7.1	1.2	99.7
Total	1.7	1.3	1.0	1.3	1.3	1.4	1.7	1.9	2.3	2.9	3.0	4.3	5.9	7.4	7.6	7.3	8.5	6.1	7.2	8.3	6.6	5.3	3.5	2.3	100.1

Appendix A.27. Crescent River north bank sonar counts by sector, 28 June through 8 August 1994.

Counts by Sector													Daily Total	Cum Total
Date	1	2	3	4	5	6	7	8	9	10	11	12		
28-Jun	0	0	1	3	1	0	0	0	0	1	0	0	6	6
29-Jun	16	0	0	0	1	0	1	0	0	1	0	1	20	26
30-Jun	4	0	0	0	0	0	1	2	0	0	0	1	8	34
01-Jul	3	9	10	0	0	0	0	2	0	0	0	0	24	58
02-Jul	27	5	4	0	0	0	0	1	0	0	0	0	37	95
03-Jul	0	0	5	0	0	0	0	0	0	0	0	1	6	101
04-Jul	5	14	37	17	5	0	0	2	0	0	0	0	80	181
05-Jul	1	18	45	19	3	1	0	0	0	0	0	0	87	268
06-Jul	11	23	72	28	3	7	0	0	0	0	0	1	145	413
07-Jul	16	19	126	79	9	0	0	0	0	0	0	0	249	662
08-Jul	91	57	186	52	35	8	6	1	0	0	0	0	436	1,098
09-Jul	14	1	43	44	15	6	0	0	0	0	0	0	123	1,221
10-Jul	25	8	44	53	44	22	2	3	1	0	0	0	202	1,423
11-Jul	105	150	129	29	33	24	6	2	0	1	0	0	479	1,902
12-Jul	253	379	171	23	4	1	0	2	2	0	0	0	835	2,737
13-Jul	82	185	225	214	221	66	6	2	0	0	0	0	1,001	3,738
14-Jul	14	75	225	128	382	121	8	0	0	1	0	0	954	4,692
15-Jul	22	50	375	71	23	11	2	0	0	0	0	0	554	5,246
16-Jul	30	66	228	100	57	5	0	0	0	0	0	0	486	5,732
17-Jul	43	436	254	447	451	89	5	1	0	0	0	0	1,726	7,458
18-Jul	58	213	128	160	38	7	1	1	0	0	0	0	606	8,064
19-Jul	19	115	213	271	65	3	1	0	1	0	0	1	689	8,753
20-Jul	17	63	144	307	77	4	0	0	1	0	0	1	614	9,367
21-Jul	28	7	20	25	15	5	1	0	0	0	0	3	104	9,471
22-Jul	31	59	357	135	55	32	10	2	1	0	3	0	685	10,156
23-Jul	80	121	768	198	113	31	1	3	1	0	0	0	1,316	11,472
24-Jul	63	100	422	186	151	63	6	7	0	1	1	0	1,000	12,472
25-Jul	78	58	234	99	37	8	1	2	0	0	0	0	517	12,989
26-Jul	75	84	203	121	86	30	5	0	0	1	2	0	607	13,596
27-Jul	114	99	496	211	180	106	7	4	1	1	0	0	1,219	14,815
28-Jul	100	126	269	169	242	121	6	10	1	0	0	0	1,044	15,859
29-Jul	94	77	229	140	175	144	23	4	0	0	0	0	886	16,745
30-Jul	84	68	321	182	280	210	6	7	4	0	0	1	1,163	17,908
31-Jul	153	76	330	156	116	147	648	122	14	11	2	0	1,775	19,683
01-Aug	196	24	41	23	9	53	796	121	6	3	0	0	1,272	20,955
02-Aug	125	26	15	12	5	69	641	133	18	6	0	0	1,050	22,005
03-Aug	216	31	22	10	5	42	302	52	13	3	1	1	698	22,703
04-Aug	200	30	25	7	4	33	489	80	7	5	2	1	883	23,586
05-Aug	242	54	42	17	4	57	641	130	27	6	2	0	1,222	24,808
06-Aug	184	30	41	10	5	32	488	150	37	28	27	9	1,041	25,849
07-Aug	147	35	25	10	2	31	340	95	38	13	18	13	767	26,616
08-Aug	84	51	39	15	4	31	388	178	49	12	5	0	856	27,472
Total	3,150	3,042	6,564	3,771	2,955	1,620	4,838	1,119	222	94	63	34	27,472	

FN: 94CR1SC.WK3

Appendix A.28. Crescent River south bank sonar counts by sector, 28 June through 8 August 1994.

Counts by Sector													Daily Total	Cum Total
Date	1	2	3	4	5	6	7	8	9	10	11	12		
28-Jun	10	5	0	0	0	0	0	0	0	0	0	0	15	15
29-Jun	19	1	1	0	0	0	0	0	0	0	0	0	21	36
30-Jun	87	92	7	0	0	0	0	0	0	0	0	0	186	222
01-Jul	29	46	19	0	0	0	0	0	0	0	0	0	94	316
02-Jul	41	10	8	0	0	0	0	0	0	0	0	0	59	375
03-Jul	53	9	2	0	0	0	0	0	0	0	0	0	64	439
04-Jul	224	37	5	0	0	0	0	0	0	0	0	0	266	705
05-Jul	135	18	0	0	0	0	0	0	0	0	0	0	153	858
06-Jul	106	23	1	0	0	0	0	0	0	0	0	0	130	988
07-Jul	242	44	0	0	0	0	0	0	0	0	0	0	286	1,274
08-Jul	288	79	0	0	0	0	0	0	0	0	0	0	367	1,641
09-Jul	66	12	0	0	0	0	0	0	0	0	0	0	78	1,719
10-Jul	123	29	0	0	0	0	0	0	0	0	0	0	152	1,871
11-Jul	394	40	0	0	0	0	0	0	0	0	0	0	434	2,305
12-Jul	317	73	0	0	0	0	0	0	0	0	0	0	390	2,695
13-Jul	352	45	1	0	0	0	0	0	0	0	0	0	398	3,093
14-Jul	176	70	4	0	0	0	0	0	0	0	0	0	250	3,343
15-Jul	199	26	3	0	0	0	0	0	0	0	0	0	228	3,571
16-Jul	178	11	0	0	0	0	0	0	0	0	0	0	189	3,760
17-Jul	794	70	0	0	0	0	0	0	0	0	0	0	864	4,624
18-Jul	335	5	0	0	0	0	0	0	0	0	0	0	340	4,964
19-Jul	343	1	0	0	0	0	0	0	0	0	0	0	344	5,308
20-Jul	463	0	0	0	0	0	0	0	0	0	0	0	463	5,771
21-Jul	164	0	0	0	0	0	0	0	0	0	0	0	164	5,935
22-Jul	348	11	0	0	0	0	0	0	0	0	0	0	359	6,294
23-Jul	808	0	0	0	0	0	0	0	0	0	0	0	808	7,102
24-Jul	470	5	0	0	0	0	0	0	0	0	0	0	475	7,577
25-Jul	295	2	0	0	0	0	0	0	0	0	0	0	297	7,874
26-Jul	239	9	0	0	0	0	0	0	0	0	0	0	248	8,122
27-Jul	330	3	0	0	0	0	0	0	0	0	0	0	333	8,455
28-Jul	374	2	0	0	0	0	0	0	0	0	0	0	376	8,831
29-Jul	506	6	0	0	0	0	0	0	0	0	0	0	512	9,343
30-Jul	545	5	0	0	0	0	0	0	0	0	0	0	550	9,893
31-Jul	904	10	0	0	0	0	0	0	0	0	0	0	914	10,807
01-Aug	618	2	0	0	0	0	0	0	0	0	0	0	620	11,427
02-Aug	541	11	0	0	0	0	0	0	0	0	0	0	552	11,979
03-Aug	331	6	0	0	0	0	0	0	0	0	0	0	337	12,316
04-Aug	525	5	0	0	0	0	0	0	0	0	0	0	530	12,846
05-Aug	490	7	0	0	0	0	0	0	0	0	0	0	497	13,343
06-Aug	378	1	0	0	0	0	0	0	0	0	0	0	379	13,722
07-Aug	264	0	0	0	0	0	0	0	0	0	0	0	264	13,986
08-Aug	337	1	0	0	0	0	0	0	0	0	0	0	338	14,324
Total	13,441	832	51	0	0	0	0	0	0	0	0	0	14,324	

Appendix A.29. Crescent River north bank sonar counts by sector, 28 June through 8 August 1994. Counts expressed as percentage of daily total.

	Counts by Sector												
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total
28-Jun	0.0	0.0	16.7	50.0	16.7	0.0	0.0	0.0	0.0	16.7	0.0	0.0	100.1
29-Jun	80.0	0.0	0.0	0.0	5.0	0.0	5.0	0.0	0.0	5.0	0.0	5.0	100.0
30-Jun	50.0	0.0	0.0	0.0	0.0	0.0	12.5	25.0	0.0	0.0	0.0	12.5	100.0
01-Jul	12.5	37.5	41.7	0.0	0.0	0.0	0.0	8.3	0.0	0.0	0.0	0.0	100.0
02-Jul	73.0	13.5	10.8	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	100.0
03-Jul	0.0	0.0	83.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	100.0
04-Jul	6.3	17.5	46.3	21.3	6.3	0.0	0.0	2.5	0.0	0.0	0.0	0.0	100.2
05-Jul	1.1	20.7	51.7	21.8	3.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	99.8
06-Jul	7.6	15.9	49.7	19.3	2.1	4.8	0.0	0.0	0.0	0.0	0.0	0.7	100.1
07-Jul	6.4	7.6	50.6	31.7	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.9
08-Jul	20.9	13.1	42.7	11.9	8.0	1.8	1.4	0.2	0.0	0.0	0.0	0.0	100.0
09-Jul	11.4	0.8	35.0	35.8	12.2	4.9	0.0	0.0	0.0	0.0	0.0	0.0	100.1
10-Jul	12.4	4.0	21.8	26.2	21.8	10.9	1.0	1.5	0.5	0.0	0.0	0.0	100.1
11-Jul	21.9	31.3	26.9	6.1	6.9	5.0	1.3	0.4	0.0	0.2	0.0	0.0	100.0
12-Jul	30.3	45.4	20.5	2.8	0.5	0.1	0.0	0.2	0.2	0.0	0.0	0.0	100.0
13-Jul	8.2	18.5	22.5	21.4	22.1	6.6	0.6	0.2	0.0	0.0	0.0	0.0	100.1
14-Jul	1.5	7.9	23.6	13.4	40.0	12.7	0.8	0.0	0.0	0.1	0.0	0.0	100.0
15-Jul	4.0	9.0	67.7	12.8	4.2	2.0	0.4	0.0	0.0	0.0	0.0	0.0	100.1
16-Jul	6.2	13.6	46.9	20.6	11.7	1.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
17-Jul	2.5	25.3	14.7	25.9	26.1	5.2	0.3	0.1	0.0	0.0	0.0	0.0	100.1
18-Jul	9.6	35.1	21.1	26.4	6.3	1.2	0.2	0.2	0.0	0.0	0.0	0.0	100.1
19-Jul	2.8	16.7	30.9	39.3	9.4	0.4	0.1	0.0	0.1	0.0	0.0	0.1	99.8
20-Jul	2.8	10.3	23.5	50.0	12.5	0.7	0.0	0.0	0.2	0.0	0.0	0.2	100.2
21-Jul	26.9	6.7	19.2	24.0	14.4	4.8	1.0	0.0	0.0	0.0	0.0	2.9	99.9
22-Jul	4.5	8.6	52.1	19.7	8.0	4.7	1.5	0.3	0.1	0.0	0.4	0.0	99.9
23-Jul	6.1	9.2	58.4	15.0	8.6	2.4	0.1	0.2	0.1	0.0	0.0	0.0	100.1
24-Jul	6.3	10.0	42.2	18.6	15.1	6.3	0.6	0.7	0.0	0.1	0.1	0.0	100.0
25-Jul	15.1	11.2	45.3	19.1	7.2	1.5	0.2	0.4	0.0	0.0	0.0	0.0	100.0
26-Jul	12.4	13.8	33.4	19.9	14.2	4.9	0.8	0.0	0.0	0.2	0.3	0.0	99.9
27-Jul	9.4	8.1	40.7	17.3	14.8	8.7	0.6	0.3	0.1	0.1	0.0	0.0	100.1
28-Jul	9.6	12.1	25.8	16.2	23.2	11.6	0.6	1.0	0.1	0.0	0.0	0.0	100.2
29-Jul	10.6	8.7	25.8	15.8	19.8	16.3	2.6	0.5	0.0	0.0	0.0	0.0	100.1
30-Jul	7.2	5.8	27.6	15.6	24.1	18.1	0.5	0.6	0.3	0.0	0.0	0.1	99.9
31-Jul	8.6	4.3	18.6	8.8	6.5	8.3	36.5	6.9	0.8	0.6	0.1	0.0	100.0
01-Aug	15.4	1.9	3.2	1.8	0.7	4.2	62.6	9.5	0.5	0.2	0.0	0.0	100.0
02-Aug	11.9	2.5	1.4	1.1	0.5	6.6	61.0	12.7	1.7	0.6	0.0	0.0	100.0
03-Aug	30.9	4.4	3.2	1.4	0.7	6.0	43.3	7.4	1.9	0.4	0.1	0.1	99.8
04-Aug	22.7	3.4	2.8	0.8	0.5	3.7	55.4	9.1	0.8	0.6	0.2	0.1	100.1
05-Aug	19.8	4.4	3.4	1.4	0.3	4.7	52.5	10.6	2.2	0.5	0.2	0.0	100.0
06-Aug	17.7	2.9	3.9	1.0	0.5	3.1	46.9	14.4	3.6	2.7	2.6	0.9	100.2
07-Aug	19.2	4.6	3.3	1.3	0.3	4.0	44.3	12.4	5.0	1.7	2.3	1.7	100.1
08-Aug	9.8	6.0	4.6	1.8	0.5	3.6	45.3	20.8	5.7	1.4	0.6	0.0	100.1
Total	11.5	11.1	23.9	13.7	10.8	5.9	17.6	4.1	0.8	0.3	0.2	0.1	100.0

Appendix A.30. Crescent River south bank sonar counts by sector, 28 June through 8 August 1994. Counts expressed as percentage of daily total.

Date	Counts by Sector												Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	
28-Jun	66.7	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
29-Jun	90.5	4.8	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.1
30-Jun	46.8	49.5	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.1
01-Jul	30.9	48.9	20.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
02-Jul	69.5	16.9	13.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
03-Jul	82.8	14.1	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
04-Jul	84.2	13.9	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
05-Jul	88.2	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
06-Jul	81.5	17.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
07-Jul	84.6	15.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
08-Jul	78.5	21.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
09-Jul	84.6	15.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
10-Jul	80.9	19.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
11-Jul	90.8	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
12-Jul	81.3	18.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
13-Jul	88.4	11.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
14-Jul	70.4	28.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
15-Jul	87.3	11.4	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
16-Jul	94.2	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
17-Jul	91.9	8.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
18-Jul	98.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
19-Jul	99.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
20-Jul	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
21-Jul	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
22-Jul	96.9	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
23-Jul	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
24-Jul	98.9	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
25-Jul	99.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
26-Jul	96.4	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
27-Jul	99.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
28-Jul	99.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
29-Jul	98.8	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
30-Jul	99.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
31-Jul	98.9	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
01-Aug	99.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
02-Aug	98.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
03-Aug	98.2	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
04-Aug	99.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
05-Aug	98.6	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
06-Aug	99.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
07-Aug	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
08-Aug	99.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Total	93.8	5.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0

Appendix A.31. Estimated salmon escapement adjacent to the north bank of the Yentna River, 7 July through through 10 August 1994. Species composition of daily sonar counts based on fish wheel catches.

Date	Sockeye		Pink		Chum		Coho		Chinook	
	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
07-Jul	48	48	26	26	18	18	22	22	4	4
08-Jul	53	101	29	55	20	38	25	47	4	8
09-Jul	65	166	36	91	24	62	31	78	5	13
10-Jul	24	190	13	104	9	71	11	89	2	15
11-Jul	52	242	28	132	20	91	24	113	4	19
12-Jul	67	309	37	169	25	116	32	145	5	24
13-Jul	73	382	40	209	27	143	34	179	6	30
14-Jul	68	450	38	247	25	168	32	211	6	36
15-Jul	49	499	28	275	18	186	23	234	4	40
16-Jul	110	609	61	336	41	227	51	285	9	49
17-Jul	70	679	209	545	86	313	39	324	1	50
18-Jul	184	863	547	1,092	227	540	100	424	4	54
19-Jul	134	997	937	2,029	91	631	61	485	0	54
20-Jul	136	1,133	777	2,806	41	672	60	545	4	58
21-Jul	62	1,195	706	3,512	70	742	47	592	0	58
22-Jul	79	1,274	452	3,964	53	795	21	613	5	63
23-Jul	93	1,367	520	4,484	51	846	18	631	0	63
24-Jul	363	1,730	1,525	6,009	93	939	46	677	0	63
25-Jul	943	2,673	1,784	7,793	164	1103	164	841	0	63
26-Jul	1,195	3,868	2,103	9,896	201	1304	208	1,049	0	63
27-Jul	623	4,491	1,485	11,381	227	1531	132	1,181	0	63
28-Jul	791	5,282	938	12,319	199	1730	301	1,482	0	63
29-Jul	1,049	6,331	1,179	13,498	334	2064	130	1,612	0	63
30-Jul	830	7,161	1,042	14,540	424	2488	251	1,863	0	63
31-Jul	480	7,641	887	15,427	218	2706	210	2,073	0	63
01-Aug	383	8,024	426	15,853	179	2885	204	2,277	0	63
02-Aug	278	8,302	217	16,070	123	3008	66	2,343	3	66
03-Aug	122	8,424	105	16,175	64	3072	36	2,379	0	66
04-Aug	283	8,707	145	16,320	70	3142	21	2,400	0	66
05-Aug	563	9,270	190	16,510	191	3333	66	2,466	0	66
06-Aug	188	9,458	46	16,556	145	3478	35	2,501	0	66
07-Aug	125	9,583	37	16,593	200	3678	15	2,516	0	66
08-Aug	48	9,631	13	16,606	79	3757	15	2,531	0	66
09-Aug	130	9,761	12	16,618	134	3891	32	2,563	0	66
10-Aug	43	9,804	13	16,631	130	4021	41	2,604	0	66

Appendix A.32. Estimated salmon escapement adjacent to the south bank of the Yentna River, 7 July through 12 August 1994. Species composition of daily sonar counts based on fish wheel catches.

Date	Sockeye		Pink		Chum		Coho		Chinook	
	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
07-Jul	223	223	11	11	36	36	63	63	4	4
08-Jul	244	467	13	24	39	75	68	131	5	9
09-Jul	369	836	18	42	59	134	104	235	7	16
10-Jul	257	1093	13	55	41	175	72	307	5	21
11-Jul	306	1399	15	70	49	224	86	393	6	27
12-Jul	398	1797	100	170	97	321	107	500	11	38
13-Jul	332	2129	84	254	81	402	90	590	9	47
14-Jul	200	2329	50	304	49	451	54	644	5	52
15-Jul	191	2,520	49	353	46	497	52	696	5	57
16-Jul	177	2,697	191	544	161	658	125	821	2	59
17-Jul	322	3,019	347	891	292	950	228	1,049	3	62
18-Jul	3,293	6,312	1,878	2,769	563	1513	898	1,947	9	71
19-Jul	7,382	13,694	2,711	5,480	383	1896	1,339	3,286	0	71
20-Jul	6,500	20,194	2,699	8,179	225	2121	1,156	4,442	18	89
21-Jul	10,555	30,749	4,936	13,115	533	2654	1,846	6,288	0	89
22-Jul	6,031	36,780	6,104	19,219	482	3136	481	6,769	0	89
23-Jul	4,474	41,254	4,309	23,528	289	3425	394	7,163	0	89
24-Jul	7,900	49,154	7,454	30,982	876	4301	1,544	8,707	0	89
25-Jul	7,355	56,509	4,635	35,617	734	5035	1,252	9,959	36	125
26-Jul	5,849	62,358	4,244	39,861	656	5691	1,162	11,121	0	125
27-Jul	4,404	66,762	3,609	43,470	670	6361	1,424	12,545	14	139
28-Jul	4,680	71,442	2,901	46,371	458	6819	1,431	13,976	16	155
29-Jul	6,965	78,407	3,161	49,532	680	7499	1,581	15,557	0	155
30-Jul	5,626	84,033	3,509	53,041	793	8292	1,694	17,251	0	155
31-Jul	4,329	88,362	3,251	56,292	1060	9352	1,043	18,294	0	155
01-Aug	4,461	92,823	2,006	58,298	600	9952	730	19,024	0	155
02-Aug	5,173	97,996	1,490	59,788	548	10500	712	19,736	0	155
03-Aug	3,969	101,965	809	60,597	566	11066	448	20,184	0	155
04-Aug	3,125	105,090	501	61,098	401	11467	230	20,414	5	160
05-Aug	3,324	108,414	399	61,497	314	11781	231	20,645	0	160
06-Aug	2,762	111,176	425	61,922	530	12311	263	20,908	0	160
07-Aug	2,457	113,633	258	62,180	743	13054	300	21,208	0	160
08-Aug	1,429	115,062	153	62,333	693	13747	289	21,497	0	160
09-Aug	1,137	116,199	80	62,413	280	14027	297	21,794	0	160
10-Aug	1,030	117,229	110	62,523	476	14503	393	22,187	0	160
11-Aug	484	117,713	12	62,535	217	14,720	185	22,372	0	160
12-Aug	515	118,228	12	62,547	230	14,950	197	22,569	0	160

Appendix A.33. Yentna River north bank sonar counts by hour, 7 July through 10 August 1994.

Counts by Hour

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily Total	Cum Total
07-Jul	2	4	3	4	2	9	2	9	6	3	10	2	3	2	13	9	5	5	16	5	1	1	1	1	118	118
08-Jul	3	2	2	8	12	2	9	3	6	0	2	4	6	6	12	4	2	10	0	4	3	9	16	6	131	249
09-Jul	4	8	8	14	7	12	3	1	18	1	14	9	6	3	6	5	5	4	6	11	8	1	4	3	161	410
10-Jul	7	0	5	6	0	1	1	3	1	2	2	3	1	3	0	0	4	0	1	0	5	6	8	0	59	469
11-Jul	5	7	11	5	6	2	14	6	6	3	8	4	4	6	0	6	6	3	5	3	8	6	2	2	128	597
12-Jul	2	12	12	11	5	3	4	2	0	4	2	9	16	4	4	11	7	3	6	11	12	13	4	9	166	763
13-Jul	1	14	12	12	3	10	4	7	8	6	7	9	10	13	3	4	4	1	12	12	5	9	4	10	180	943
14-Jul	4	7	9	16	6	14	8	5	9	5	2	7	8	10	2	8	5	11	4	6	4	4	6	9	169	1,112
15-Jul	2	5	5	5	1	2	6	3	2	3	3	1	2	1	3	10	7	12	1	13	6	15	10	3	122	1,234
16-Jul	14	23	17	3	13	8	4	22	6	7	7	3	11	7	11	7	17	10	24	8	11	18	7	14	272	1,506
17-Jul	12	19	6	4	10	16	12	6	3	5	4	29	17	16	15	33	24	10	26	24	27	35	26	26	405	1,911
18-Jul	37	53	22	39	45	43	30	50	26	17	28	27	48	44	31	31	28	51	113	56	65	54	37	87	1,062	2,973
19-Jul	87	58	66	72	63	54	41	39	19	25	39	20	46	52	28	45	73	28	64	62	68	75	51	48	1,223	4,196
20-Jul	93	56	52	36	33	50	29	28	23	38	20	19	61	89	27	16	35	30	30	59	40	43	49	62	1,018	5,214
21-Jul	42	47	41	23	55	37	33	17	24	24	13	12	26	31	35	12	31	40	43	40	47	39	78	95	885	6,099
22-Jul	55	62	53	32	30	22	31	16	32	22	44	7	8	9	4	6	28	11	22	31	26	25	17	17	610	6,709
23-Jul	12	19	9	12	13	6	11	9	12	8	10	14	15	27	26	25	15	41	62	59	67	62	63	85	682	7,391
24-Jul	62	40	56	52	36	41	39	43	27	34	22	28	59	135	52	59	61	109	194	106	163	183	243	183	2,027	9,418
25-Jul	148	183	126	120	86	63	88	80	56	95	85	93	90	74	64	82	194	152	145	158	229	198	170	276	3,055	12,473
26-Jul	192	132	99	86	98	71	86	103	118	84	54	100	147	126	288	328	294	233	143	141	185	207	177	215	3,707	16,180
27-Jul	183	138	117	112	112	77	81	99	68	76	68	82	71	119	102	117	131	84	116	142	122	85	79	86	2,467	18,647
28-Jul	129	110	94	104	99	111	55	84	32	38	52	35	67	106	157	104	89	159	159	100	66	101	106	72	2,229	20,876
29-Jul	135	114	83	150	178	164	100	117	96	57	60	88	108	177	184	87	116	157	124	93	85	85	75	59	2,692	23,568
30-Jul	133	155	126	148	149	139	110	113	86	56	55	57	118	85	117	80	101	157	96	77	84	119	100	86	2,547	26,115
31-Jul	153	116	128	99	90	111	60	44	48	47	29	49	67	59	92	59	91	56	67	67	43	62	84	74	1,795	27,910
01-Aug	53	33	57	40	47	18	26	39	35	32	40	31	23	49	73	49	61	116	70	50	64	62	45	79	1,192	29,102
02-Aug	38	54	38	38	19	22	34	13	14	14	37	13	17	22	36	52	25	35	51	22	25	29	15	24	687	29,789
03-Aug	20	24	18	14	11	10	3	12	20	9	4	17	10	6	8	13	12	14	20	14	33	9	19	7	327	30,116
04-Aug	16	17	16	7	6	9	8	10	12	18	12	13	22	34	18	26	42	22	30	44	24	34	49	30	519	30,635
05-Aug	44	59	55	56	39	36	26	31	45	34	26	18	21	70	36	65	39	84	76	42	28	25	41	14	1,010	31,645
06-Aug	24	19	16	25	9	15	4	10	5	12	4	7	29	31	32	25	11	15	17	20	24	20	23	17	414	32,059
07-Aug	15	18	9	16	16	11	3	7	6	17	18	24	7	11	26	30	14	18	17	19	13	28	9	25	377	32,436
08-Aug	9	6	0	2	2	9	2	8	3	3	6	6	11	8	17	9	7	3	11	11	9	5	4	4	155	32,591
09-Aug	4	3	7	7	1	4	9	2	9	14	4	12	25	17	15	23	22	24	19	20	22	10	15	20	308	32,899
10-Aug	7	10	7	7	2	11	12	4	21	17	10	14	0	9	5	8	13	12	5	21	12	8	4	8	227	33,126
Total	1,747	1,628	1,385	1,385	1,304	1,213	988	1,045	902	830	801	866	1,180	1,461	1,542	1,448	1,619	1,720	1,795	1,551	1,634	1,685	1,641	1,756	33,126	

Appendix A.34. Yentna River south bank sonar counts by hour, 7 July through 12 August 1994.

Counts by Hour																										Daily Total	Cum Total
Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
07-Jul	10	5	23	24	15	5	18	5	52	30	11	9	3	21	16	8	22	11	6	11	12	9	5	6	337	337	
08-Jul	5	7	11	10	9	6	8	11	8	7	37	13	12	58	22	15	14	10	23	19	16	20	12	16	369	706	
09-Jul	30	46	7	24	18	8	2	25	11	13	39	10	12	38	32	82	37	7	22	51	15	15	4	9	557	1,263	
10-Jul	15	12	90	10	29	12	17	16	8	27	20	23	6	5	9	8	5	4	8	9	11	16	27	1	388	1,651	
11-Jul	1	6	29	15	8	32	31	14	30	5	33	9	11	19	7	26	30	27	25	22	29	21	14	18	462	2,113	
12-Jul	14	12	10	19	22	6	12	10	34	32	27	29	12	39	38	46	25	80	35	62	42	39	40	28	713	2,826	
13-Jul	16	21	13	19	13	20	17	13	33	9	19	35	23	29	51	24	67	32	18	41	26	17	8	32	596	3,422	
14-Jul	31	22	27	24	26	14	9	10	14	16	15	16	23	12	12	5	25	5	6	10	4	7	13	358	3,780		
15-Jul	8	13	14	3	6	10	12	14	7	23	4	5	24	17	8	20	15	11	12	17	28	26	23	23	343	4,123	
16-Jul	16	25	21	30	23	41	45	20	33	31	30	28	16	30	32	27	9	19	30	36	34	30	16	34	656	4,779	
17-Jul	13	18	30	38	25	31	10	29	23	39	14	37	14	22	42	94	57	38	43	117	104	142	114	98	1,192	5,971	
18-Jul	107	230	156	231	258	287	293	259	292	255	262	307	231	229	319	357	365	212	276	276	375	344	400	320	6,641	12,612	
19-Jul	395	453	520	470	506	434	652	443	332	453	600	494	483	609	393	358	523	544	521	642	448	476	490	576	11,815	24,427	
20-Jul	560	656	446	387	307	271	255	286	301	274	414	312	553	503	406	647	506	468	552	752	393	510	534	305	10,598	35,025	
21-Jul	654	810	565	471	410	416	293	484	664	574	481	579	846	1,222	1,004	786	805	889	857	1,264	1,011	999	728	968	17,870	52,895	
22-Jul	1,068	878	746	615	433	514	753	738	772	705	573	614	335	657	761	362	510	385	400	271	348	273	201	196	13,098	65,993	
23-Jul	276	286	254	219	163	217	291	227	159	177	190	217	235	370	532	343	469	593	587	592	767	753	698	851	9,466	75,459	
24-Jul	739	739	565	428	516	414	680	586	543	581	516	629	544	904	657	836	947	1,205	1,003	1,088	980	998	724	952	17,774	93,233	
25-Jul	847	736	644	662	612	503	498	560	462	434	499	392	576	547	422	361	414	545	737	830	708	695	569	759	14,012	107,245	
26-Jul	705	640	495	350	270	232	344	396	475	316	231	257	378	445	558	659	611	778	726	773	592	569	496	615	11,911	119,156	
27-Jul	565	592	420	348	345	276	352	345	242	307	376	289	416	424	425	437	592	463	680	553	386	408	307	573	10,121	129,277	
28-Jul	458	477	389	331	255	274	279	256	325	342	378	505	402	346	426	367	368	346	510	534	381	450	391	696	9,486	138,763	
29-Jul	691	658	540	465	451	486	493	648	462	480	494	366	437	443	448	482	297	544	620	536	473	658	653	564	12,387	151,150	
30-Jul	732	697	568	442	460	367	549	656	606	417	440	564	405	558	489	420	319	436	451	415	435	443	379	374	11,822	162,772	
31-Jul	554	551	478	435	267	275	227	501	399	436	361	368	247	523	451	401	331	509	289	534	394	379	389	384	9,683	172,455	
01-Aug	433	470	447	354	270	238	286	410	397	348	198	219	179	373	424	326	212	344	373	312	282	261	298	343	7,797	180,252	
02-Aug	394	410	361	346	330	247	278	399	403	399	391	321	362	485	333	317	316	316	317	248	234	261	147	308	7,923	188,175	
03-Aug	322	270	262	213	192	178	149	243	245	304	239	284	306	323	255	229	320	132	210	287	243	187	201	198	5,792	193,967	
04-Aug	224	260	186	156	173	137	148	159	153	145	167	176	216	210	226	181	214	178	195	154	218	131	110	145	4,262	198,229	
05-Aug	217	244	175	151	124	104	133	136	135	122	170	111	137	168	162	205	310	209	294	175	242	179	169	196	4,268	202,497	
06-Aug	254	257	213	155	156	149	115	101	111	141	127	100	158	107	142	140	211	221	141	202	206	167	187	219	3,980	206,477	
07-Aug	212	175	146	111	164	159	133	120	96	113	122	157	90	141	131	204	174	225	230	159	174	186	172	164	3,758	210,235	
08-Aug	139	191	137	142	136	95	119	114	77	92	82	116	100	128	155	112	59	87	106	78	86	53	74	86	2,564	212,799	
09-Aug	97	74	56	47	43	115	55	43	56	40	38	74	74	101	115	49	83	70	65	102	88	111	93	105	1,794	214,593	
10-Aug	99	118	84	82	83	72	88	62	53	89	97	91	96	108	118	106	56	72	45	69	67	46	113	95	2,009	216,602	
11-Aug	53	31	80	44	40	55	47	39	39	51	29	30	35	46	26	22	42	24	36	37	21	11	32	28	898	217,500	
12-Aug	31	52	57	30	8	16	27	36	13	27	59	14	28	21	48	44	50	55	67	70	28	95	37	41	954	218,454	
Total	10,975	11,140	9,265	7,901	7,166	6,716	7,718	8,414	8,085	7,864	7,783	7,800	8,025	10,281	9,785	9,113	9,390	10,114	10,515	11,344	9,907	9,982	8,862	10,339	218,454		

Appendix A.35. Yentna River north bank sonar counts by hour, 7 July through 10 August 1994. Counts expressed as percentage of daily total.

Date	Counts by Hour																								Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
07-Jul	1.7	3.4	2.5	3.4	1.7	7.6	1.7	7.6	5.1	2.5	8.5	1.7	2.5	1.7	11.0	7.6	4.2	4.2	13.6	4.2	0.8	0.8	0.8	0.8	99.6
08-Jul	2.3	1.5	1.5	6.1	9.2	1.5	6.9	2.3	4.6	0.0	1.5	3.1	4.6	4.6	9.2	3.1	1.5	7.6	0.0	3.1	2.3	6.9	12.2	4.6	100.2
09-Jul	2.5	5.0	5.0	8.7	4.3	7.5	1.9	0.6	11.2	0.6	8.7	5.6	3.7	1.9	3.7	3.1	3.1	2.5	3.7	6.8	5.0	0.6	2.5	1.9	100.1
10-Jul	11.9	0.0	8.5	10.2	0.0	1.7	1.7	5.1	1.7	3.4	3.4	5.1	1.7	5.1	0.0	0.0	6.8	0.0	1.7	0.0	8.5	10.2	13.6	0.0	100.3
11-Jul	3.9	5.5	8.6	3.9	4.7	1.6	10.9	4.7	4.7	2.3	6.3	3.1	3.1	4.7	0.0	4.7	4.7	2.3	3.9	2.3	6.3	4.7	1.6	1.6	100.1
12-Jul	1.2	7.2	7.2	6.6	3.0	1.8	2.4	1.2	0.0	2.4	1.2	5.4	9.6	2.4	2.4	6.6	4.2	1.8	3.6	6.6	7.2	7.8	2.4	5.4	99.6
13-Jul	0.6	7.8	6.7	6.7	1.7	5.6	2.2	3.9	4.4	3.3	3.9	5.0	5.6	7.2	1.7	2.2	2.2	0.6	6.7	6.7	2.8	5.0	2.2	5.6	100.3
14-Jul	2.4	4.1	5.3	9.5	3.6	8.3	4.7	3.0	5.3	3.0	1.2	4.1	4.7	5.9	1.2	4.7	3.0	6.5	2.4	3.6	2.4	2.4	3.6	5.3	100.2
15-Jul	1.6	4.9	4.1	4.1	0.8	1.6	4.9	2.5	1.6	2.5	2.5	0.8	1.6	0.8	2.5	8.2	5.7	9.8	0.8	10.7	4.9	12.3	8.2	2.5	99.9
16-Jul	5.1	8.5	6.3	1.1	4.8	2.9	1.5	8.1	2.2	2.6	2.6	1.1	4.0	2.6	4.0	2.6	6.3	3.7	8.8	2.9	4.0	6.6	2.6	5.1	100.0
17-Jul	3.0	4.7	1.5	1.0	2.5	4.0	3.0	1.5	0.7	1.2	1.0	7.2	4.2	4.0	3.7	8.1	5.9	2.5	6.4	5.9	6.7	8.6	6.4	6.4	100.1
18-Jul	3.5	5.0	2.1	3.7	4.2	4.0	2.8	4.7	2.4	1.6	2.6	2.5	4.5	4.1	2.9	2.9	2.6	4.8	10.6	5.3	6.1	5.1	3.5	8.2	99.7
19-Jul	7.1	4.7	5.4	5.9	5.2	4.4	3.4	3.2	1.6	2.0	3.2	1.6	3.8	4.3	2.3	3.7	6.0	2.3	5.2	5.1	5.6	6.1	4.2	3.9	100.2
20-Jul	9.1	5.5	5.1	3.5	3.2	4.9	2.8	2.3	3.7	2.0	1.9	6.0	8.7	2.7	1.6	3.4	2.9	2.9	5.8	3.9	4.2	4.8	6.1	6.1	99.8
21-Jul	4.7	5.3	4.6	2.6	6.2	4.2	3.7	1.9	2.7	2.7	1.5	1.4	2.9	3.5	4.0	1.4	3.5	4.5	4.9	4.5	5.3	4.4	8.8	10.7	99.9
22-Jul	9.0	10.2	8.7	5.2	4.9	3.6	5.1	2.6	5.2	3.6	7.2	1.1	1.3	1.5	0.7	1.0	4.6	1.8	3.6	5.1	4.3	4.1	2.8	2.8	100.0
23-Jul	1.8	2.8	1.3	1.8	1.9	0.9	1.6	1.3	1.8	1.2	1.5	2.1	2.2	4.0	3.8	3.7	2.2	6.0	9.1	8.7	9.8	9.1	9.2	12.5	100.3
24-Jul	3.1	2.0	2.8	2.6	1.8	2.0	1.9	2.1	1.3	1.7	1.1	1.4	2.9	6.7	2.6	2.9	3.0	5.4	9.6	5.2	8.0	9.0	12.0	9.0	100.1
25-Jul	4.8	6.0	4.1	3.9	2.8	2.1	2.9	2.6	1.8	3.1	2.8	3.0	2.9	2.4	2.1	2.7	6.4	5.0	4.7	5.2	7.5	6.5	5.6	9.0	99.9
26-Jul	5.2	3.6	2.7	2.3	2.6	1.9	2.3	2.8	3.2	2.3	1.5	2.7	4.0	3.4	7.8	8.8	7.9	6.3	3.9	3.8	5.0	5.6	4.8	5.8	100.2
27-Jul	7.4	5.6	4.7	4.5	4.5	3.1	3.3	4.0	2.8	3.1	2.8	3.3	2.9	4.8	4.1	4.7	5.3	3.4	4.7	5.8	4.9	3.4	3.2	3.5	99.8
28-Jul	5.8	4.9	4.2	4.7	4.4	5.0	2.5	3.8	1.4	1.7	2.3	1.6	3.0	4.8	7.0	4.7	4.0	7.1	7.1	4.5	3.0	4.5	4.8	3.2	100.0
29-Jul	5.0	4.2	3.1	5.6	6.6	6.1	3.7	4.3	3.6	2.1	2.2	3.3	4.0	6.6	6.8	3.2	4.3	5.8	4.6	3.5	3.2	3.2	2.8	2.2	100.0
30-Jul	5.2	6.1	4.9	5.8	5.9	5.5	4.3	4.4	3.4	2.2	2.2	2.2	4.6	3.3	4.6	3.1	4.0	6.2	3.8	3.0	3.3	4.7	3.9	3.4	100.0
31-Jul	8.5	6.5	7.1	5.5	5.0	6.2	3.3	2.5	2.7	2.6	1.6	2.7	3.7	3.3	5.1	3.3	5.1	3.1	3.7	3.7	2.4	3.5	4.7	4.1	99.9
01-Aug	4.4	2.8	4.8	3.4	3.9	1.5	2.2	3.3	2.9	2.7	3.4	2.6	1.9	4.1	6.1	4.1	5.1	9.7	5.9	4.2	5.4	5.2	3.8	6.6	100.0
02-Aug	5.5	7.9	5.5	5.5	2.8	3.2	4.9	1.9	2.0	2.0	5.4	1.9	2.5	3.2	5.2	7.6	3.6	5.1	7.4	3.2	3.6	4.2	2.2	3.5	99.8
03-Aug	6.1	7.3	5.5	4.3	3.4	3.1	0.9	3.7	6.1	2.8	1.2	5.2	3.1	1.8	2.4	4.0	3.7	4.3	6.1	4.3	10.1	2.8	5.8	2.1	100.1
04-Aug	3.1	3.3	3.1	1.3	1.2	1.7	1.5	1.9	2.3	3.5	2.3	2.5	4.2	6.6	3.5	5.0	8.1	4.2	5.8	8.5	4.6	6.6	9.4	5.8	100.0
05-Aug	4.4	5.8	5.4	5.5	3.9	3.6	2.6	3.1	4.5	3.4	2.6	1.8	2.1	6.9	3.6	6.4	3.9	8.3	7.5	4.2	2.8	2.5	4.1	1.4	100.3
06-Aug	5.8	4.6	3.9	6.0	2.2	3.6	1.0	2.4	1.2	2.9	1.0	1.7	7.0	7.5	7.7	6.0	2.7	3.6	4.1	4.8	5.8	4.8	5.6	4.1	100.0
07-Aug	4.0	4.8	2.4	4.2	4.2	2.9	0.8	1.9	1.6	4.5	4.8	6.4	1.9	2.9	6.9	8.0	3.7	4.8	4.5	5.0	3.4	7.4	2.4	6.6	100.0
08-Aug	5.8	3.8	0.0	1.3	1.3	5.8	1.3	5.2	1.9	1.9	3.9	3.9	7.1	5.2	11.0	5.8	4.5	1.9	7.1	5.8	3.2	2.6	2.6	2.6	100.1
09-Aug	1.3	1.0	2.3	2.3	0.3	1.3	2.9	0.6	2.9	4.5	1.3	3.8	8.1	5.5	4.9	7.5	7.1	7.8	6.2	8.5	7.1	3.2	4.9	6.5	99.9
10-Aug	3.1	4.4	3.1	3.1	0.9	4.8	5.3	1.8	9.3	7.5	4.4	8.2	0.0	4.0	2.2	3.5	5.7	5.3	2.2	9.3	5.3	3.5	1.8	3.5	100.2
Total	5.3	4.9	4.2	4.2	3.9	3.7	3.0	3.2	2.7	2.5	2.4	2.6	3.6	4.4	4.7	4.4	4.9	5.2	5.4	4.7	4.9	5.1	5.0	5.3	100.2

Appendix A.36. Yentna River south bank sonar counts by hour, 7 July through 12 August 1994. Counts expressed as percentage of daily total.

Date	Counts by Hour																								Daily Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
07-Jul	3.0	1.5	6.8	7.1	4.5	1.5	5.3	1.5	15.4	8.9	3.3	2.7	0.9	6.2	4.7	2.4	6.5	3.3	1.8	3.3	3.6	2.7	1.5	1.8	100.2
08-Jul	1.4	1.9	3.0	2.7	2.4	1.6	2.2	3.0	2.2	1.9	10.0	3.5	3.3	15.7	6.0	4.1	3.8	2.7	6.2	5.1	4.3	5.4	3.3	4.3	100.0
09-Jul	5.4	8.3	1.3	4.3	3.2	1.4	0.4	4.5	2.0	2.3	7.0	1.8	2.2	6.8	5.7	14.7	6.6	1.3	3.9	9.2	2.7	2.7	0.7	1.6	100.0
10-Jul	3.9	3.1	23.2	2.6	7.5	3.1	4.4	4.1	2.1	7.0	5.2	5.9	1.5	1.3	2.3	2.1	1.3	1.0	2.1	2.3	2.8	4.1	7.0	0.3	100.2
11-Jul	0.2	1.3	6.3	3.2	1.7	6.9	6.7	3.0	6.5	1.1	7.1	1.9	2.4	4.1	1.5	5.6	6.5	5.8	5.4	4.8	6.3	4.5	3.0	3.9	99.7
12-Jul	2.0	1.7	1.4	2.7	3.1	0.8	1.7	1.4	4.8	4.5	3.8	4.1	1.7	5.5	5.3	6.5	3.5	11.2	4.9	8.7	5.9	5.5	5.6	3.9	100.2
13-Jul	2.7	3.5	2.2	3.2	2.2	3.4	2.9	2.2	5.5	1.5	3.2	5.9	3.9	4.9	8.6	4.0	11.2	5.4	3.0	6.9	4.4	2.9	1.3	5.4	100.3
14-Jul	8.7	6.1	7.5	6.7	7.3	3.9	2.5	2.8	3.9	4.5	4.2	4.5	6.4	3.4	3.4	3.4	1.4	7.0	1.4	1.7	2.8	1.1	2.0	3.6	100.2
15-Jul	2.3	3.8	4.1	0.9	1.7	2.9	3.5	4.1	2.0	6.7	1.2	1.5	7.0	5.0	2.3	5.8	4.4	3.2	3.5	5.0	8.2	7.6	6.7	6.7	100.1
16-Jul	2.4	3.8	3.2	4.6	3.5	6.3	6.9	3.0	5.0	4.7	4.6	4.3	2.4	4.6	4.9	4.1	1.4	2.9	4.6	5.5	5.2	4.6	2.4	5.2	100.1
17-Jul	1.1	1.5	2.5	3.2	2.1	2.6	0.8	2.4	1.9	3.3	1.2	3.1	1.2	1.8	3.5	7.9	4.8	3.2	3.6	9.8	8.7	11.9	9.6	8.2	99.9
18-Jul	1.6	3.5	2.3	3.5	3.9	4.3	4.4	3.9	4.4	3.8	3.9	4.6	3.5	3.4	4.8	5.4	5.5	3.2	4.2	4.2	5.6	5.2	6.0	4.8	99.9
19-Jul	3.3	3.8	4.4	4.0	4.3	3.7	5.5	3.7	2.8	3.8	5.1	4.2	4.1	5.2	3.3	3.0	4.4	4.6	4.4	5.4	3.8	4.0	4.1	4.9	99.8
20-Jul	5.3	6.2	4.2	3.7	2.9	2.6	2.4	2.7	2.8	2.6	3.9	2.9	5.2	4.7	3.8	6.1	4.8	4.4	5.2	7.1	3.7	4.8	5.0	2.9	99.9
21-Jul	3.7	4.5	3.2	2.6	2.3	2.3	1.6	2.7	3.7	3.2	2.7	3.2	4.7	6.8	6.1	4.4	4.5	5.0	4.8	7.1	5.7	5.6	4.1	5.4	99.9
22-Jul	8.1	6.7	5.7	4.7	3.3	3.9	5.7	5.6	5.9	5.4	4.4	4.7	2.6	5.0	5.8	2.8	3.9	2.9	3.1	2.1	2.7	2.1	1.5	1.5	100.1
23-Jul	2.9	3.0	2.7	2.3	1.7	2.3	3.1	2.4	1.7	1.9	2.0	2.3	2.5	3.9	5.6	3.6	5.0	6.3	6.2	6.3	8.1	8.0	7.4	9.0	100.2
24-Jul	4.2	4.2	3.2	2.4	2.9	2.3	3.8	3.3	3.1	3.3	2.9	3.5	3.1	5.1	3.7	4.7	5.3	6.8	5.6	6.1	5.5	5.6	4.1	5.4	100.1
25-Jul	6.0	5.3	4.6	4.7	4.4	3.6	3.6	4.0	3.3	3.1	3.6	2.8	4.1	3.9	3.0	2.6	3.0	3.9	5.3	5.9	5.1	5.0	4.1	5.4	100.3
26-Jul	5.9	5.4	4.2	2.9	2.3	1.9	2.9	3.3	4.0	2.7	1.9	2.2	3.2	3.7	4.7	5.5	5.1	6.5	6.1	6.5	5.0	4.8	4.2	5.2	100.1
27-Jul	5.6	5.8	4.1	3.4	3.4	2.7	3.5	3.4	2.4	3.0	3.7	2.9	4.1	4.2	4.2	4.3	5.8	4.6	6.7	5.5	3.8	4.0	3.0	5.7	99.8
28-Jul	4.8	5.0	4.1	3.5	2.7	2.9	2.9	2.7	3.4	3.6	4.0	5.3	4.2	3.6	4.5	3.9	3.9	3.6	5.4	5.6	4.0	4.7	4.1	7.3	99.7
29-Jul	5.6	5.3	4.4	3.8	3.6	3.9	4.0	5.2	3.7	3.9	4.0	3.0	3.5	3.6	3.6	3.9	2.4	4.4	5.0	4.3	3.8	5.3	5.3	4.6	100.1
30-Jul	6.3	6.0	4.9	3.8	4.0	3.2	4.7	5.6	5.2	3.6	3.8	4.9	3.5	4.8	4.2	3.6	2.7	3.8	3.9	3.6	3.7	3.8	3.3	3.2	100.1
31-Jul	5.7	5.7	4.9	4.5	2.8	2.8	2.3	5.2	4.1	4.5	3.7	3.8	2.6	5.4	4.7	4.1	3.4	5.3	3.0	5.5	4.1	3.9	4.0	4.0	100.0
01-Aug	5.6	6.0	5.7	4.5	3.5	3.1	3.7	5.3	5.1	4.5	2.5	2.8	2.3	4.8	5.4	4.2	2.7	4.4	4.8	4.0	3.6	3.3	3.8	4.4	100.0
02-Aug	5.0	5.2	4.6	4.4	4.2	3.1	3.5	5.0	5.1	5.0	4.9	4.1	4.6	6.1	4.2	4.0	4.0	4.0	4.0	3.1	3.0	3.3	1.9	3.9	100.2
03-Aug	5.6	4.7	4.5	3.7	3.3	3.1	2.6	4.2	4.2	5.2	4.1	4.9	5.3	5.6	4.4	4.0	5.5	2.3	3.6	5.0	4.2	3.2	3.5	3.4	100.1
04-Aug	5.3	6.1	4.4	3.7	4.1	3.2	3.5	3.7	3.6	3.4	3.9	4.1	5.1	4.9	5.3	4.2	5.0	4.2	4.6	3.6	5.1	3.1	2.6	3.4	100.1
05-Aug	5.1	5.7	4.1	3.5	2.9	2.4	3.1	3.2	3.2	2.9	4.0	2.6	3.2	3.9	3.8	4.8	7.3	4.9	6.9	4.1	5.7	4.2	4.0	4.6	100.1
06-Aug	6.4	6.5	5.4	3.9	3.9	3.7	2.9	2.5	2.8	3.5	3.2	2.5	4.0	2.7	3.6	3.5	5.3	5.6	3.5	5.1	5.2	4.2	4.7	5.5	100.1
07-Aug	5.6	4.7	3.9	3.0	4.4	4.2	3.5	3.2	2.6	3.0	3.2	4.2	2.4	3.8	3.5	5.4	4.6	6.0	6.1	4.2	4.6	4.9	4.6	4.4	100.0
08-Aug	5.4	7.4	5.3	5.5	5.3	3.7	4.6	4.4	3.0	3.6	3.2	4.5	3.9	5.0	6.0	4.4	2.3	3.4	4.1	3.0	3.4	2.1	2.9	3.4	99.8
09-Aug	5.4	4.1	3.1	2.6	2.4	6.4	3.1	2.4	3.1	2.2	2.1	4.1	4.1	5.6	6.4	2.7	4.6	3.9	3.6	5.7	4.9	6.2	5.2	5.9	99.8
10-Aug	4.9	5.9	4.2	4.1	4.1	3.6	4.4	3.1	2.6	4.4	4.8	4.5	4.8	5.4	5.9	5.3	2.8	3.6	2.2	3.4	3.3	2.3	5.6	4.7	99.9
11-Aug	5.9	3.5	8.9	4.9	4.5	6.1	5.2	4.3	4.3	5.7	3.2	3.3	3.9	5.1	2.9	2.4	4.7	2.7	4.0	4.1	2.3	1.2	3.6	3.1	99.8
12-Aug	3.2	5.5	6.0	3.1	0.8	1.7	2.8	3.8	1.4	2.8	6.2	1.5	2.9	2.2	5.0	4.6	5.2	5.8	7.0	7.3	2.9	10.0	3.9	4.3	99.9
Total	5.0	5.1	4.2	3.6	3.3	3.1	3.5	3.9	3.7	3.6	3.6	3.6	3.7	4.7	4.5	4.2	4.3	4.6	4.8	5.2	4.5	4.6	4.1	4.7	100.1

Appendix A.37. Yentna River north bank sonar counts by sector, 7 July through 10 August 1994.

Counts by Sector													Daily Total	Cum Total
Date	1	2	3	4	5	6	7	8	9	10	11	12		
07-Jul	26	35	18	10	6	4	9	7	3	0	0	0	118	118
08-Jul	26	16	6	6	16	19	3	3	10	9	2	15	131	249
09-Jul	29	13	11	19	15	22	19	9	7	5	3	9	161	410
10-Jul	16	10	6	1	1	4	13	1	0	0	0	7	59	469
11-Jul	24	4	10	10	21	28	5	8	7	3	3	5	128	597
12-Jul	20	8	22	30	26	30	10	16	2	1	1	0	166	763
13-Jul	39	11	25	15	34	25	13	7	3	3	3	2	180	943
14-Jul	83	9	10	31	15	8	5	1	1	0	0	6	169	1,112
15-Jul	21	8	23	26	17	11	8	0	5	0	2	1	122	1,234
16-Jul	7	30	27	35	77	46	23	12	4	4	4	3	272	1,506
17-Jul	5	37	41	60	74	94	47	14	12	10	2	9	405	1,911
18-Jul	30	144	124	178	214	144	90	66	36	17	12	7	1,062	2,973
19-Jul	26	239	210	261	221	146	83	20	4	5	4	4	1,223	4,196
20-Jul	36	187	189	177	185	123	67	23	9	12	4	6	1,018	5,214
21-Jul	165	147	109	153	134	101	42	26	5	2	0	1	885	6,099
22-Jul	328	77	55	60	34	35	18	2	1	0	0	0	610	6,709
23-Jul	108	271	138	92	39	20	8	4	0	2	0	0	682	7,391
24-Jul	179	603	311	239	245	203	119	74	30	16	3	5	2,027	9,418
25-Jul	300	876	475	405	320	346	203	68	32	16	8	6	3,055	12,473
26-Jul	385	1,240	619	492	462	313	115	45	13	12	4	7	3,707	16,180
27-Jul	181	801	362	364	333	267	100	41	12	3	2	1	2,467	18,647
28-Jul	194	663	343	308	285	269	87	37	16	14	4	9	2,229	20,876
29-Jul	235	847	347	300	335	314	140	96	42	27	6	3	2,692	23,568
30-Jul	273	845	374	388	331	205	85	20	5	4	2	15	2,547	26,115
31-Jul	221	656	249	222	220	125	52	29	5	5	7	4	1,795	27,910
01-Aug	155	422	183	170	146	87	22	4	0	1	1	1	1,192	29,102
02-Aug	99	264	105	107	61	35	15	1	0	0	0	0	687	29,789
03-Aug	54	122	43	32	39	25	11	1	0	0	0	0	327	30,116
04-Aug	76	220	102	39	40	33	7	2	0	0	0	0	519	30,635
05-Aug	124	467	125	85	95	68	27	15	3	1	0	0	1,010	31,645
06-Aug	64	213	47	26	30	21	7	6	0	0	0	0	414	32,059
07-Aug	49	155	47	43	30	33	18	1	1	0	0	0	377	32,436
08-Aug	25	75	23	7	6	5	14	0	0	0	0	0	155	32,591
09-Aug	41	124	39	30	29	30	12	3	0	0	0	0	308	32,899
10-Aug	59	58	26	29	31	18	5	1	0	0	0	0	227	33,126
Total	3,703	9,897	4,844	4,450	4,167	3,257	1,502	663	268	172	77	126	33,126	

Appendix A.38. Yentna River south bank sonar counts by sector, 7 July through 12 August 1994.

Counts by Sector														
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total	Cum Total
07-Jul	84	51	30	38	38	27	7	16	29	14	2	1	337	337
08-Jul	101	47	57	35	49	30	14	14	12	2	1	7	369	706
09-Jul	128	153	100	52	29	31	19	28	8	1	1	7	557	1,263
10-Jul	97	34	55	39	29	40	44	34	8	4	4	0	388	1,651
11-Jul	73	103	92	59	48	34	21	12	10	6	2	2	462	2,113
12-Jul	69	99	124	94	95	94	62	44	13	9	6	4	713	2,826
13-Jul	63	99	95	83	74	86	49	20	6	6	5	10	596	3,422
14-Jul	50	61	67	38	37	52	15	12	11	3	6	6	358	3,780
15-Jul	32	13	51	109	57	42	14	11	5	3	4	2	343	4,123
16-Jul	8	26	106	172	128	119	29	34	14	3	11	6	656	4,779
17-Jul	8	55	167	233	244	288	72	73	30	16	6	0	1,192	5,971
18-Jul	226	774	1,193	1,425	1,298	1,014	307	232	83	46	31	12	6,641	12,612
19-Jul	763	3,965	2,613	1,776	1,229	700	301	331	56	59	16	6	11,815	24,427
20-Jul	881	3,688	2,273	1,474	934	613	278	293	86	46	25	7	10,598	35,025
21-Jul	1,442	5,172	3,947	2,769	1,831	1,223	574	572	190	105	34	11	17,870	52,895
22-Jul	1,498	4,438	3,069	1,963	1,152	549	177	143	65	28	10	6	13,098	65,993
23-Jul	1,577	3,506	2,021	1,236	704	294	60	53	11	3	1	0	9,466	75,459
24-Jul	3,071	6,614	3,742	2,225	1,301	491	108	137	52	21	10	2	17,774	93,233
25-Jul	1,823	4,753	3,133	1,969	1,270	474	131	256	106	51	29	17	14,012	107,245
26-Jul	1,323	3,952	2,720	1,711	1,175	578	162	182	67	28	10	3	11,911	119,156
27-Jul	835	3,019	2,350	1,695	1,135	602	186	177	77	30	12	3	10,121	129,277
28-Jul	820	2,715	2,177	1,544	1,120	609	177	203	78	24	15	4	9,486	138,763
29-Jul	1,648	3,951	2,624	1,695	1,176	645	249	233	97	51	9	9	12,387	151,150
30-Jul	2,026	4,183	2,300	1,349	836	444	168	208	58	43	6	1	11,622	162,772
31-Jul	1,442	3,346	2,002	1,221	792	442	134	178	56	32	22	16	9,683	172,455
01-Aug	990	2,576	1,677	1,118	704	360	131	153	45	26	8	9	7,797	180,252
02-Aug	1,351	2,902	1,574	952	610	302	92	95	34	6	3	2	7,923	188,175
03-Aug	776	2,130	1,276	679	466	249	77	75	31	11	1	1	5,792	193,967
04-Aug	720	1,602	904	496	289	162	37	33	15	3	1	0	4,262	198,229
05-Aug	646	1,657	943	529	254	132	45	43	8	4	3	4	4,268	202,497
06-Aug	520	1,485	871	495	359	153	52	36	7	2	0	0	3,980	206,477
07-Aug	455	1,218	838	552	369	205	51	46	18	3	1	2	3,758	210,235
08-Aug	355	825	541	391	277	100	27	32	11	4	1	0	2,564	212,799
09-Aug	206	616	379	252	183	97	22	27	9	3	0	0	1,794	214,593
10-Aug	224	614	404	292	247	135	28	37	13	10	3	2	2,009	216,602
11-Aug	84	299	191	142	97	53	11	10	5	5	1	0	898	217,500
12-Aug	92	252	253	168	112	49	12	6	2	5	1	2	954	218,454
Total	26,507	70,993	46,959	31,070	20,768	11,518	3,943	4,089	1,426	716	301	164	218,454	

Appendix A.39. Yentna River north bank sonar counts by sector, 7 July through 10 August 1994. Counts expressed as percentage of daily total.

Counts by Sector													
Date	1	2	3	4	5	6	7	8	9	10	11	12	Daily Total
07-Jul	22.0	29.7	15.3	8.5	5.1	3.4	7.6	5.9	2.5	0.0	0.0	0.0	100.0
08-Jul	19.8	12.2	4.6	4.6	12.2	14.5	2.3	2.3	7.6	6.9	1.5	11.5	100.0
09-Jul	18.0	8.1	6.8	11.8	9.3	13.7	11.8	5.6	4.3	3.1	1.9	5.6	100.0
10-Jul	27.1	16.9	10.2	1.7	1.7	6.8	22.0	1.7	0.0	0.0	0.0	11.9	100.0
11-Jul	18.8	3.1	7.8	7.8	16.4	21.9	3.9	6.3	5.5	2.3	2.3	3.9	100.0
12-Jul	12.0	4.8	13.3	18.1	15.7	18.1	6.0	9.6	1.2	0.6	0.6	0.0	100.0
13-Jul	21.7	6.1	13.9	8.3	18.9	13.9	7.2	3.9	1.7	1.7	1.7	1.1	100.1
14-Jul	49.1	5.3	5.9	18.3	8.9	4.7	3.0	0.6	0.6	0.0	0.0	3.6	100.0
15-Jul	17.2	6.6	18.9	21.3	13.9	9.0	6.6	0.0	4.1	0.0	1.6	0.8	100.0
16-Jul	2.6	11.0	9.9	12.9	28.3	16.9	8.5	4.4	1.5	1.5	1.5	1.1	100.1
17-Jul	1.2	9.1	10.1	14.8	18.3	23.2	11.6	3.5	3.0	2.5	0.5	2.2	100.0
18-Jul	2.8	13.6	11.7	16.8	20.2	13.6	8.5	6.2	3.4	1.6	1.1	0.7	100.2
19-Jul	2.1	19.5	17.2	21.3	18.1	11.9	6.8	1.6	0.3	0.4	0.3	0.3	99.8
20-Jul	3.5	18.4	18.6	17.4	18.2	12.1	6.6	2.3	0.9	1.2	0.4	0.6	100.2
21-Jul	18.6	16.6	12.3	17.3	15.1	11.4	4.7	2.9	0.6	0.2	0.0	0.1	99.8
22-Jul	53.8	12.6	9.0	9.8	5.6	5.7	3.0	0.3	0.2	0.0	0.0	0.0	100.0
23-Jul	15.8	39.7	20.2	13.5	5.7	2.9	1.2	0.6	0.0	0.3	0.0	0.0	99.9
24-Jul	8.8	29.7	15.3	11.8	12.1	10.0	5.9	3.7	1.5	0.8	0.1	0.2	99.9
25-Jul	9.8	28.7	15.5	13.3	10.5	11.3	6.6	2.2	1.0	0.5	0.3	0.2	99.9
26-Jul	10.4	33.5	16.7	13.3	12.5	8.4	3.1	1.2	0.4	0.3	0.1	0.2	100.1
27-Jul	7.3	32.5	14.7	14.8	13.5	10.8	4.1	1.7	0.5	0.1	0.1	0.0	100.1
28-Jul	8.7	29.7	15.4	13.8	12.8	12.1	3.9	1.7	0.7	0.6	0.2	0.4	100.0
29-Jul	8.7	31.5	12.9	11.1	12.4	11.7	5.2	3.6	1.6	1.0	0.2	0.1	100.0
30-Jul	10.7	33.2	14.7	15.2	13.0	8.0	3.3	0.8	0.2	0.2	0.1	0.6	100.0
31-Jul	12.3	36.5	13.9	12.4	12.3	7.0	2.9	1.6	0.3	0.3	0.4	0.2	100.1
01-Aug	13.0	35.4	15.4	14.3	12.2	7.3	1.8	0.3	0.0	0.1	0.1	0.1	100.0
02-Aug	14.4	38.4	15.3	15.6	8.9	5.1	2.2	0.1	0.0	0.0	0.0	0.0	100.0
03-Aug	16.5	37.3	13.1	9.8	11.9	7.6	3.4	0.3	0.0	0.0	0.0	0.0	99.9
04-Aug	14.6	42.4	19.7	7.5	7.7	6.4	1.3	0.4	0.0	0.0	0.0	0.0	100.0
05-Aug	12.3	46.2	12.4	8.4	9.4	6.7	2.7	1.5	0.3	0.1	0.0	0.0	100.0
06-Aug	15.5	51.4	11.4	6.3	7.2	5.1	1.7	1.4	0.0	0.0	0.0	0.0	100.0
07-Aug	13.0	41.1	12.5	11.4	8.0	8.8	4.8	0.3	0.3	0.0	0.0	0.0	100.2
08-Aug	16.1	48.4	14.8	4.5	3.9	3.2	9.0	0.0	0.0	0.0	0.0	0.0	99.9
09-Aug	13.3	40.3	12.7	9.7	9.4	9.7	3.9	1.0	0.0	0.0	0.0	0.0	100.0
10-Aug	26.0	25.6	11.5	12.8	13.7	7.9	2.2	0.4	0.0	0.0	0.0	0.0	100.1
Total	11.2	29.9	14.6	13.4	12.6	9.8	4.5	2.0	0.8	0.5	0.2	0.4	99.9

Appendix A.40. Yentna River south bank sonar counts by sector, 7 July through 12 August 1994. Counts expressed as percentage of daily total.

Counts by Sector													Daily Total
Date	1	2	3	4	5	6	7	8	9	10	11	12	
07-Jul	24.9	15.1	8.9	11.3	11.3	8.0	2.1	4.7	8.6	4.2	0.6	0.3	100.0
08-Jul	27.4	12.7	15.4	9.5	13.3	8.1	3.8	3.8	3.3	0.5	0.3	1.9	100.0
09-Jul	23.0	27.5	18.0	9.3	5.2	5.6	3.4	5.0	1.4	0.2	0.2	1.3	100.1
10-Jul	25.0	8.8	14.2	10.1	7.5	10.3	11.3	8.8	2.1	1.0	1.0	0.0	100.1
11-Jul	15.8	22.3	19.9	12.8	10.4	7.4	4.5	2.6	2.2	1.3	0.4	0.4	100.0
12-Jul	9.7	13.9	17.4	13.2	13.3	13.2	8.7	6.2	1.8	1.3	0.8	0.6	100.1
13-Jul	10.6	16.6	15.9	13.9	12.4	14.4	8.2	3.4	1.0	1.0	0.8	1.7	99.9
14-Jul	14.0	17.0	18.7	10.6	10.3	14.5	4.2	3.4	3.1	0.8	1.7	1.7	100.0
15-Jul	9.3	3.8	14.9	31.8	16.6	12.2	4.1	3.2	1.5	0.9	1.2	0.6	100.1
16-Jul	1.2	4.0	16.2	26.2	19.5	18.1	4.4	5.2	2.1	0.5	1.7	0.9	100.0
17-Jul	0.7	4.6	14.0	19.5	20.5	24.2	6.0	6.1	2.5	1.3	0.5	0.0	99.9
18-Jul	3.4	11.7	18.0	21.5	19.5	15.3	4.6	3.5	1.2	0.7	0.5	0.2	100.1
19-Jul	6.5	33.6	22.1	15.0	10.4	5.9	2.5	2.8	0.5	0.5	0.1	0.1	100.0
20-Jul	8.3	34.8	21.4	13.9	8.8	5.8	2.6	2.8	0.8	0.4	0.2	0.1	99.9
21-Jul	8.1	28.9	22.1	15.5	10.2	6.8	3.2	3.2	1.1	0.6	0.2	0.1	100.0
22-Jul	11.4	33.9	23.4	15.0	8.8	4.2	1.4	1.1	0.5	0.2	0.1	0.0	100.0
23-Jul	16.7	37.0	21.4	13.1	7.4	3.1	0.6	0.6	0.1	0.0	0.0	0.0	100.0
24-Jul	17.3	37.2	21.1	12.5	7.3	2.8	0.6	0.8	0.3	0.1	0.1	0.0	100.1
25-Jul	13.0	33.9	22.4	14.1	9.1	3.4	0.9	1.8	0.8	0.4	0.2	0.1	100.1
26-Jul	11.1	33.2	22.8	14.4	9.9	4.9	1.4	1.5	0.6	0.2	0.1	0.0	100.1
27-Jul	8.3	29.8	23.2	16.7	11.2	5.9	1.8	1.7	0.8	0.3	0.1	0.0	99.8
28-Jul	8.6	28.6	22.9	16.3	11.8	6.4	1.9	2.1	0.8	0.3	0.2	0.0	99.9
29-Jul	13.3	31.9	21.2	13.7	9.5	5.2	2.0	1.9	0.8	0.4	0.1	0.1	100.1
30-Jul	17.4	36.0	19.8	11.6	7.2	3.8	1.4	1.8	0.5	0.4	0.1	0.0	100.0
31-Jul	14.9	34.6	20.7	12.6	8.2	4.6	1.4	1.8	0.6	0.3	0.2	0.2	100.1
01-Aug	12.7	33.0	21.5	14.3	9.0	4.6	1.7	2.0	0.6	0.3	0.1	0.1	99.9
02-Aug	17.1	36.6	19.9	12.0	7.7	3.8	1.2	1.2	0.4	0.1	0.0	0.0	100.0
03-Aug	13.4	36.8	22.0	11.7	8.4	4.3	1.3	1.3	0.5	0.2	0.0	0.0	99.9
04-Aug	16.9	37.6	21.2	11.6	6.8	3.8	0.9	0.8	0.4	0.1	0.0	0.0	100.1
05-Aug	15.1	38.8	22.1	12.4	6.0	3.1	1.1	1.0	0.2	0.1	0.1	0.1	100.1
06-Aug	13.1	37.3	21.9	12.4	9.0	3.8	1.3	0.9	0.2	0.1	0.0	0.0	100.0
07-Aug	12.1	32.4	22.3	14.7	9.8	5.5	1.4	1.2	0.5	0.1	0.0	0.1	100.1
08-Aug	13.8	32.2	21.1	15.2	10.8	3.9	1.1	1.2	0.4	0.2	0.0	0.0	99.9
09-Aug	11.5	34.3	21.1	14.0	10.2	5.4	1.2	1.5	0.5	0.2	0.0	0.0	99.9
10-Aug	11.1	30.6	20.1	14.5	12.3	6.7	1.4	1.8	0.6	0.5	0.1	0.1	99.8
11-Aug	9.4	33.3	21.3	15.8	10.8	5.9	1.2	1.1	0.6	0.6	0.1	0.0	100.1
12-Aug	9.6	26.4	26.5	17.6	11.7	5.1	1.3	0.6	0.2	0.5	0.1	0.2	99.8
Total	12.1	32.5	21.5	14.2	9.5	5.3	1.8	1.9	0.7	0.3	0.1	0.1	100.0

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